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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 1.

SAN FRANCISCO, SATURDAY, JANUARY 6, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

A Page on the Apricot.

The apricot is one of our most beautiful and, in regions suited to it, one of our most profitable fruits. It is a fruit also in which the southwest corner of the United States holds the palm alone, for its range in the open air is less than even the restricted area suitable to citrus fruits. Of course, the tree will endure more severe conditions than will any evergreen semi-tropical, but when the test of regular and profitable fruiting on a commercial scale is made the apricot is exceedingly select in its area. For this reason we apprehend that apricot production in California will not be overdone. The rapid advance the fruit has made in popular favor, in both canned and dried forms, in Europe as well as in this country, indicates that the future demand is not likely to be more than met by the quantity of really fine, clean and large fruit which will be produced. We believe that a well-grown and cared for apricot orchard, on a good soil and in a good place, is about as good a fruit ownership as can be named.

In southern California for the last few years the gold of the apricot has been somewhat obscured by the gold of the orange, and we apprehend that some have made a change not to their advantage. However this may be, there are many good apricot orchards still left at the south, and there are likely to be more of them. One of our plates shows how a well-started young apricot tree in Riverside looks. It has received the shaping of J. H. Reed, who has as good an eye for form in a tree and as rational a way to secure it as any man known to us. The vase form, with its feathering-down of small-bearing wood to shade the stem, is finely exemplified in the picture. The lowest picture on the page shows a very different aspect of apricot pruning. These are old trees at Pomona, which had been allowed to stray away into a rangy, straggling growth, and had become weak and unproductive. They were restored by a very thorough thinning and cutting back of branches and the picture shows the cloud of blossoms

which betokened the renewed bearing life of the trees. The apricot shows gratitude for the knife of the intelligent pruner.

But, perhaps, the most interesting of the group of pictures is the central one, which shows what the apricot will do even in a region of great heat and drouth with winter irrigation alone if it has a soil of such depth and permeability that it can send its roots into a great mass of moist soil. The picture represents trees upon which a very interesting experiment in winter irrigation was carried on by Prof. A. J. McClatchie of the Agricultural Experiment Station at Phoenix, Arizona. The object of the experiment was to ascertain how much summer irrigation might be rendered unnecessary by the application of an abundance of water during the winter.

The orchard selected was irrigated (by the furrow system) eight times from December to March. The last irrigation, during the latter part of March, was an especially thorough one. As soon as the soil was sufficiently dry, to check evaporation, it was harrowed crosswise of the furrows, and was cultivated twice and plowed and harrowed once during the next three months.

For determining the moisture content of the soil



Young Apricot Trees at Riverside.

slow, and the irrigating water is supplemented by some rainfall; while during late spring and early summer, when the trees are growing rapidly and consequently need the most water, the conditions are quite different.



Apricot Trees Under Winter Irrigation at the Arizona Experiment Station at Phoenix.

a sample of each foot from the surface to ground water was taken during April, May, June and September. In taking the samples of soil, roots were encountered in abundance as deep as fourteen to sixteen feet, while one peach root was followed into the twentieth foot at a horizontal distance of eighteen feet from the tree, showing that the water of at least the upper twenty feet could be used by the trees.

The conditions above ground were very satisfactory. The trees grew thriftily and maintained a vigorous appearance throughout the season. The trees were well loaded with fruit, the peaches and apricots being larger than the previous year when the orchard was irrigated frequently during the summer. The quality of fruit was excellent. At the close of the season, though having received but one irrigation since March, the trees were in fine condition.

The results of this experiment indicate the value of filling the soil with water during the winter. At this time, irrigating water is comparatively abundant, evaporation is

oranges and prunes in the capital invested and the number of persons who depend upon them for a livelihood. A dozen years ago the annual product of the fruit was estimated as worth \$300,000 to growers; last year, with a decidedly short crop, it was worth about \$1,600,000. It is estimated that in the next five years the annual yield will amount to \$2,500,000. The capital invested in the growth and shipping of this fruit—that is, the money which has been put in land, trees, canning and packing houses and the like—reaches the total of more than \$13,000,000. Constant care is required to produce the results the grower obtains. The \$100 to \$180 per acre he realizes is gotten at the expense of never-ceasing care and labor. The processes, involving constant cultivation, irrigation and pruning, eat up much of the profit, but not enough to make the business all the same very lucrative when properly managed."

We cannot agree with the New York writer on the standing of the apricot in California. The prune and the peach are both very far beyond it in acreage and in value produced, but still the apricot is entitled to praise and to advancement.

The average cost in foreign countries of all sugar imported into the United States in the fiscal year 1872 was 5.37 cents per pound; in 1899, 2.39 cents per pound.



Bloom of Old Trees Restored by Cutting Back.



PACIFIC RURAL PRESS.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, January 6, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Young Apricot Trees at Riverside; Apricot Trees Under Winter Irrigation at the Arizona Experiment Station at Phoenix; Bloom of Old Trees Restored by Cutting Back, 1.
EDITORIAL.—A Page on the Apricot, 1. The Week; A Question of Farm Policy; Miscellaneous, 2.
QUERIES AND REPLIES.—Scale on Prunes in Sonoma County; Late Keeping Apples, 2. Chestnuts on Oaks; Blue Gum from Cuttings; The Triumph Peach; Oaks and Forestry; Root Borers and Red Spider; Phylloxera on Grape Cuttings; Shaping Apple Trees, 3.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending January 1, 1900, 3.
HORTICULTURE.—Fruit Tree Stocks; The Value of Improved Fruit Varieties, 4.
THE POULTRY YARD.—Doctoring Poultry; Young vs. Old Fowls for Laying, 5.
FRUIT MARKETING.—Bleaching Walnuts; Call for Fruit Growers' Convention, 6.
THE STOCKMAN.—Modern Range Methods, 6.
AGRICULTURAL REVIEW.—7.
THE HOME CIRCLE.—California's Yellow Poppy; Rosa of Tannenburg, 8. Washing Bedding; Girls of Japan; The Art of Sealing, 9.
THE MARKETS.—Produce Market; Fruit Markets, 10-11.
PATRONS OF HUSBANDRY.—Grange Elections, 14.
MISCELLANEOUS.—Answers by Dr. Creely—For a Bad Foot; To Remove Wood Ticks; Requires Examination, 3. Prevention of Rot in Potatoes, 5. List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 12. The A B C of Bee Culture; Santa Barbara Notes; Accepts Our Advice, 14. A Simple Method of Thawing Dynamite; Up-to-date Poultry Farming; Compressed Hay; A New Tobacco, 15.

The Week.

The cold term along the coast and the foothills and the chilling fog which has hung for weeks over some parts of the great interior valley have passed away. A smart rain, varying from a drenching to a dust-laying, has visited nearly all parts of the State and has been generally welcomed. As we traversed the whole length of the San Joaquin the other day, there were bright sunshine, green grass and warmth, suggestive of springtime. It would be pleasant if we could count our cold weather over for the year, but it is a little early to whistle, though the edge of the woods is almost in sight; a few days more will take us out of the range of freezing, though frosts may come later.

New Year's was joyfully celebrated in all circles. Individual satisfaction over a very active holiday trade was matched by municipal delight over the progressive and liberal policy which San Francisco has entered upon by a popular vote. The closing of the century will mark a new epoch in the higher life of the metropolis of the Pacific coast. The beautifying and sanitation of the city and the renewal of her educational facilities have been provided for by voting a large bond issue by an overwhelming majority. There could hardly be a more concrete demonstration of the goodness of the times.

ARRANGEMENTS to bring raisin packing under the direction of the growers' association are progressing. All the raisin packing plants are to be appraised and an estimate of the good-will made on the business done by each firm during the past three years. The smaller packing houses will probably close up if the combine is formed, and then a packers' and growers' association will be formed, in which the growers will take half the stock. It is estimated that this can be done without the growers being required to put up the cash, as the banks stand ready to make advances if the present annual contract with the growers is extended over a term of years. A great saving will be effected in telegraph bills and the absence of all competition will enable good prices to be obtained, while the profits on seeding will enable growers to obtain very nearly the full cash value of their raisins.

In order to correct a misapprehension as to the effect of the pending French reciprocity treaty upon wines, the State Department has authorized the statement that so far from injuriously affecting American wines, the treaty actually secures a reduction of about 25% of duty on California wines imported into France. This has been secured without any corresponding remission of ours imposed upon French wines imported into the United States.

A Question of Farm Policy.

We had an hour's conversation the other day with a representative Sacramento valley farmer, which was, to us at least, very interesting and suggestive. He has, ever since early days, held his own, as he expressed it, upon a considerable area of hill and valley land which he acquired in early times, no doubt on favoring terms. It would seem that holding one's own on fertile land secured on low valuation should not be a very difficult affair, considering the periods of high prices for field crops which have prevailed, now and then, during the last forty years, and yet many have not done it. Our friend said that he could count at least seventy within his knowledge of his part of the valley who had come and gone because they could not hold their own. Why did these fail and why did he succeed, when the lands were similar and the advantages equal at the beginning? If it had been one against one, or one against a few, the question might be answered by reference to personal qualities of thrift, economy, habits of life, etc., but with one against seventy it is more reasonable to believe that the question is one of farm policy and method, with only so much of personality in it as is involved in a better conception of policy and choice of method consistent therewith.

We were not surprised to hear our friend explain the failures of those who had left the Sacramento valley for newer lands of the north and for other lines of work by the fact that they attempted to hold their own by having everything to buy and only one thing to sell. Aside from the danger of banking on one product which may fall below cost of production—and in fact does too frequently take that course—this one product is produced at too great cost because of the large expense of maintenance which must be charged up to it. To use our friend's cutting comments on such a course, it takes, say, 100 days' work to sow and harvest a wheat crop on a certain acreage. In addition to rest days, there are 200 more in the year during which teams must be fed, and nearly as many perhaps when the farmer does not make effective use of his time. All the maintenance during this two-thirds of the time has to be charged to the wheat. Not only that, but selling only one thing and buying many, this maintenance comes at a maximum cost because of all the transportation charges and profits which must be counted in. Take, for instance, the dollar which comes to the grower from a sack of wheat sold in Liverpool: It has to go to Kansas City to buy a piece of bacon, and the dollar's worth becomes less every time the bacon is handled before it gets to the farm. The producing effort on the farm thus becomes constantly lessened until, paying all profits, the ultimate outcome leaves no profit to the farmer. With lessened acre-product on worn lands, with lessened market value and with the runs of unfavorable seasons, wheat has often fallen below the profit line, even with cost of production reduced by cheap harvesting.

It is then this single-crop policy, and that crop a low-priced one, which has caused so many men to lose their holds and to seek new fields, when better policies would have saved them. A great part of the blame for the wrong course must be charged to ignorance, and the rest, perhaps, to indolence. Very few men of the older settlers are held back by an honest belief that the country is not adapted for crops, which, as a matter of fact, can be very successfully grown, and others do not know half the value and uses of crops, and, consequently, do not give attention to them, because they do not seem available. Alfalfa is a good instance of this fact. Outside of the regions where alfalfa has become a staple, many people look upon it only as a dairy forage, and do not know that horses, hogs, sheep, and even hens, can be largely grown upon it. They count it good for milk, perhaps, but do not know that, being good to make milk, it is also good to make muscle and give strength to the mature animal and quick growth to a young one of any of the herbivorous classes. The result is that you can ride for hours in some of our interior valleys without seeing an acre of alfalfa verdure and without seeing a grazing animal. The result is that not only the meat supplies of the towns but of the farms, as well, is brought from beyond the State line, while, instead of importing, the State ought to be meat exporting. The realization of such an end depends upon three things in

the main: recognition of the value of alfalfa; recognition of the value of the silo and the corn crop; improvement of wild pasture lands and the growth of many more forage plants and root crops, both in summer and winter, according to the nature of these plants. If people would only look into these things and what can be done with the products thus secured, a new vista of profitable efforts for money saving and money making would be opened up.

All these materials are foundations of a greater animal interest for California. These must be attained by those who now have the lands or by those who will get it when the present owners cannot longer hold their own, as our Sacramento valley friend holds his. The fruit interests do not need urging; they have attained such extent that they will advance rapidly enough by their own acquired momentum. But the animal industries are needed as supplementary to grain and fruit to make our State not only self-supporting, but to extend and enrich our exports. The outside world is urging this. Cattle buyers come into our northernmost counties and drive out stock for Eastern shipment, while our larger valleys do not produce enough for home use. All these great valleys should have a surplus of high-class, well-fed stock, and buyers would eagerly seek it. Beef stock, mutton stock, good horse stock of popular type, hogs, dairy products and poultry products—all these should be produced in large volume, and nearly all farmers should do something with them. If this were done and suitable effort put forth to grow crops for the growth of such animal products, the present weak tenure of many farmers would be strengthened, many homes would be beautified and many lives lengthened and refreshed. The worst of the present situation is that so many farmers do not know that this can be done, or, knowing, lack energy to put forth the effort. It is needless to say that our Sacramento valley friend not only knows these things, but does them, and that is the reason why, amid all the vicissitudes of forty years of valley farming, he has held his own.

QUERIES AND REPLIES.

Scale on Prunes in Sonoma County.

TO THE EDITOR:—What can best be done for my prune trees which are infected with scale? One of my neighbors says he was advised not to spray, but it seems to me that the trees are in very bad shape and should be helped in some way.—SUBSCRIBER, Sonoma county.

The treatment of scale on your prune trees, which we imagine is the black scale, or another lecanium, is perhaps the most difficult which the grower of deciduous fruits has to contend with. In San Jose and the lower part of Alameda county this scale is apparently held in check by a parasite. We understand that efforts to introduce this parasite in the region about Healdsburg have not yet proven satisfactory. Spraying for this insect is quite difficult, because during the winter time the eggs are held very tightly under an impenetrable cover. The application of ordinary winter washes, for this reason, does not accomplish the destruction of the insect. Probably the most satisfactory treatment with sprays is the use of kerosene emulsion, after the young scales have hatched out and are running about upon the leaves and twigs early in the summer. Kerosene emulsion, however, has to be very carefully prepared and very thoroughly applied, which is a difficult proposition when the tree is in foliage. The main hope in the case lies either in the introduction of the parasite or in fumigation, as is done for the black scale on citrus trees in southern California. The advice which was given to your neighbor not to spray must have been based upon the prospect of introducing the parasite. Certainly something must be done, for this scale, if left entirely alone, not only stops the young growth of the tree, but renders the fruit unsalable because of the black deposit which is formed upon it. We would like to give you an easier and more direct answer to your question, but the problem is in itself very difficult and will require your best efforts to solve it.

Late Keeping Apples.

TO THE EDITOR:—I see by the papers that the Pajaro valley apple growers expect to realize advantage from shipment of their fruit to the Pacific

islands, and that hard, late keeping varieties are needed. I have found that the Pride of Texas is very productive, has considerable red color, is of good quality and keeps till early summer. Stark is also very productive and a late keeper. Among other good varieties which keep late are Occident, Winesap, Ralls, Salome and York Imperial. Perhaps these facts may interest your readers.—APPLE GROWER, Western New York.

It is true that we have a chance of shipping a certain amount of fruit to the islands of the Pacific, and it is probable that those varieties which are now proving most satisfactory for shipment to the London market may also answer very well for the Western export trade. Some of the varieties which you name are among our best varieties. The Winesap and Ralls are old, well tested varieties here. The Stark and York Imperial have been fruited sufficiently to show their excellence; the Yellow Newtown Pippin is unsurpassed for export trade, and the Yellow Bellflower, as grown in California, has such conspicuous excellence that during its season it is hardly likely to be misplaced for any other variety. We are glad to have your endorsement of the other varieties. It may be suggestive to some of our readers who are testing late keeping apples.

Chestnuts on Oaks.

TO THE EDITOR:—Does the chestnut succeed when grafted on the oak? It is talked about here and we have agreed to refer the matter to you.—READER.

The chestnut has been often grafted upon the black oak and upon the so-called "chestnut oak." In both cases there has been considerable growth and expectation that the union will be satisfactory. We are not aware, however, that this hope has been realized. In some cases the fruit of the chestnut has been reported, but generally nothing satisfactory has been secured. In view of the fact that experiments have been in progress for the last twenty years at least, and success has not yet been demonstrated, the presumption is rather against the operation.

Blue Gum From Cuttings.

TO THE EDITOR:—Can the blue gum be grown from cuttings or is it better to follow the seed method?—L. X., Fresno county.

We presume a start could be had from cuttings if conditions were just right, but just what those conditions are we do not know. Who has tried to get trees in that way? But even if trees from cuttings could be readily secured, there would seem to be little object in following that method, because the plant from the seed has so much better a root system and its growth is so rapid that the seedling would probably outstrip the cutting. Still, as a matter of horticultural interest, we would like to know what RURAL readers have done in this line.

The Triumph Peach.

TO THE EDITOR:—What success has the early yellow freestone peach, Triumph, attained in California? Last year I planted fifty two-year-old trees, which are all doing well, on my place on the south fork of Eel river, and I intend to set out 100 more of the same variety, provided I can learn of their success here, this season. At the time of my purchase I was told that the variety had not fruited in California, but that it had created quite a sensation in the East, where, I believe, it originated.—J. W. MONROE, Fortuna.

We do not know enough yet about this variety to commend it for planting. It has won some favorable reports. We shall be glad to hear from those who have fruited or handled it.

Oaks and Forestry.

TO THE EDITOR:—Through the columns of your paper I wish you to inform me where I can get the acorns of the English and Cork oak; also any other information you may have on the subject. Is there a book on "Forestry" that can be applied to California, and where is it to be found?—C. D. GUILFORD, Creston.

The acorns of both these oaks were freely distributed by the University a few years ago. Probably the University can still supply English oak acorns in their season, for there are several bearing trees in Berkeley, of which, perhaps, the largest is in Prof. Hilgard's garden. There are a few Cork oaks of considerable size here and there in the State and probably many young trees. Any reader who can supply Mr. Guilford is invited to write to him.

There is no book directly upon California forestry,

though accounts of California trees are found in nearly all books on botany and arboriculture. The best way to get a start in forestry literature is to apply to the Secretary of Agriculture at Washington for the publications of the Forestry Division.

Root Borers and Red Spider.

TO THE EDITOR:—Will one pint of tar to three gallons of whitewash do any damage to trees? Is one application of lime, sulphur and salt sufficient for red spider? Would you advise putting it on trees in the Santa Clara valley considering the rain we have had this winter?—CAMPBELLS, Santa Clara county.

We presume it is intended to use the tar and whitewash around the base of the tree to repel the moth of the root borer. Such a mixture will do no harm on the rough bark nor will it do any good for the root borer at this time of the year. It should be applied in the spring when the moths are egg-laying. We believe that a good winter spraying of lime, salt and sulphur is worth all it costs as an insecticide and fungicide, even if the trees are in pretty good shape. As for the red spider, the winter rain cannot injure the egg, though the live insect is very easily injured by water.

Phylloxera on Grape Cuttings.

TO THE EDITOR:—Is there danger of introducing phylloxera by means of vine cuttings? I wish to plant a half dozen cuttings, just to get a start with resistants in case I need them later.—READER, Sacramento county.

There is, of course, a certain amount of danger in it, but if you introduce only cuttings, and not rooted plants, there is exceedingly little danger of their being infested with phylloxera, for in California this insect is restricted to the roots of the vine. To be doubly sure, however, you might rub the cuttings over with a soft brush and a little warm soapsuds. This would remove any possible chance of infection. Disinfection of cuttings on a large scale is best done by putting the cuttings in a tight box or vat, placing a saucer of bisulphide of carbon on top of them, and covering closely for a half hour. Don't smoke your pipe while you are doing this.

Shaping Apple Trees.

TO THE EDITOR:—I expect to plant several thousand apple trees, yearlings, 4 feet high. I find a difference of opinion concerning topping yearlings. Do you advise topping or leaving a central stem? I would like your advice on the subject.—READER, Watsonville.

We believe in low, compact trees, and to secure them we would shorten in the yearlings to about 2½ feet and select from the branches which grow the first year four or five so spaced and placed around the stem that the tree will be well balanced and have the lowest branch about a foot or a foot and a half from the ground. Such a low, well-balanced tree, with a vase shape, will be convenient for cultivation and will always be within reach for fruit picking, pruning, spraying, etc. This form is most easily reached by dispensing with a central stem. The subject is fully discussed and illustrated in the third edition of "California Fruits."

Answers by Dr. Creely.

FOR A BAD FOOT.

TO THE EDITOR:—I have a valuable horse that has a peculiar disease in his front foot. The hoof immediately inside the hard outer shell is rotting away in a narrow strip up from the point of the hoof. It is now up two inches. There is no sore yet, nor does the horse go lame. It is a dry rot, the portion of hoof being soft and easily dug out. Can you or some of your correspondents tell me through the RURAL PRESS what the disease is and how to cure it? WM. JOHNS, Whitlock.

Take: Lead acetate, 1 oz.; copper sulphate, ½ oz.; zinc sulphate, 1 oz.; tinct. opium, 2 oz.; water, 1 pint. Mix and apply two times daily after cleansing.

TO REMOVE WOOD TICKS.

TO THE EDITOR:—Will you kindly inform me through your valuable paper what is good for wood ticks on horses? NUTTER, Portola.

Take: Coal oil, 4 parts; lard, 2 parts. Apply wherever necessary.

REQUIRES EXAMINATION.

TO THE EDITOR:—I have a valuable mule that seems to have lost control of his muscular power in one of his hind legs; cannot back, and when he gets his leg in motion it flies back and forward for as many as five or six times before he can stop it. His foot drags on the toe when he walks. Seems to be sore from the hock up.

Twice before it left him in two or three hours after he turned in the corral. This time it has remained all day. Will Dr. Creely please advise? L.

It is absolutely necessary for a veterinarian to examine the horse to locate the exact spot and nature of injury. Most important of all is to examine the foot.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 1, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

The temperature for the week was nearly normal in the central and northern portions of the State, and averaged 6° above normal in southern California. The cold, foggy weather which had prevailed in the San Joaquin and Sacramento valleys and in portions of the coast and bay sections for some two weeks, was followed by warmer weather on the 30th of December, accompanied by heavy rain in the northern section and light showers in the San Joaquin valley and southern California.

In the central and northern portions of the State the rainfall to date has been more than sufficient, and farming operations are now being seriously retarded, it having become impossible to seed summer-fallow ground in many localities. Ample rain for present purposes has fallen in the San Joaquin valley, while southern California still lacks sufficient moisture to insure good crops of grain.

Early sown grain continues to grow rapidly, and pasturage is abundant in most sections. Alfalfa was benefitted by recent rains. Conditions were very favorable for maturing oranges in southern California, and the fruit is being gathered and shipped in considerable quantities.

Heavy frosts were frequent during the week and injured tender vegetables in some sections.

SACRAMENTO VALLEY.

Cold, foggy weather prevailed during most of the week, and was followed by heavy rain on December 30. Farm work is progressing slowly, the soil being too moist for plowing and seeding.

Tree planting is in progress, and some orchardists are pruning.

Frosts occurred during the week, but no damage has been reported.

COAST AND BAY SECTIONS.

A heavy fog prevailed in some parts of the bay section during the first of the week, accompanied by unusually heavy weather. Toward the close of the week the fog lifted and a heavy rain fell. In other portions conditions were more favorable.

Frosts on December 27 and 28 injured vegetables, but no other damage was reported.

Plowing and seeding are progressing slowly, but the prospect still appears good for large crops of grain and beets.

SAN JOAQUIN VALLEY.

On the black lands of the northern portion of the valley no farm work is being done, owing to excessive moisture; work is progressing on the sandy soil, with good prospects for large grain crops.

The heavy fog prevailing in the valley for nearly two weeks was followed by warmer weather and rain toward the close of the week.

Early sown grain continues thrifty, and in most sections is growing rapidly; its condition would be improved by warmer weather. Alfalfa and pasturage were benefitted by the rain.

SOUTHERN CALIFORNIA.

The light showers December 30th were beneficial to grain and pasturage, but unless heavy rains come soon, irrigation will be resumed in some sections.

Early sown grain and vegetables are still looking well, and pasturage is plentiful except in localities where the rainfall has been deficient.

Orange picking is now progressing rapidly, conditions having been unusually favorable for developing the fruit during the past week.

LOS ANGELES SUMMARY.—Warm during early part of week, with drying winds; showers latter part helped pasture and grain somewhat in southern section. More rain needed, especially in northern section. Orange picking active.

The following data for the week ending 5 A. M. Wednesday, January 3, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Minimum Temperature for the Week.	Maximum Temperature for the Week.
Eureka.....	?	?	12.47	17.09	38	54*
Red Bluff.....	3.78	13.54	5.97	10.58	34	54
Sacramento.....	2.04	11.03	5.21	7.72	58	34
San Francisco.....	2.25	11.92	4.69	9.31	38	60
Fresno.....	.38	4.79	2.61	3.61	34	62
Independence.....	.20	1.86	0.69	2.31	30	60
San Luis Obispo.....	1.20	10.50	3.67	5.47	32	72
Los Angeles.....	.06	3.40	0.86	6.58	44	78
San Diego.....	.11	1.95	1.33	3.34	52	74
Yuma.....	T	0.58	1.32	1.71	38	74

* Incomplete.

HORTICULTURE.

Fruit Tree Stocks.

By LEONARD COATES at the Fruit Growers' Convention at San Jose.

The fine appearance of most orchards in California is due as much to natural conditions as to the skill of the nurseryman, or to the care of the orchardist. When soil and climate are perfect, he is an egotist, indeed, who takes to himself the credit for unusually vigorous growth or abnormal bearing qualities. Let these conditions be adverse and the results would be far different.

I would mean by this that neither the nurseryman or the orchardist is as careful as he would have to be elsewhere to produce a fine orchard, and in nothing is the former more careless than in the selection of suitable stocks, or roots on which to graft or bud his trees.

The causes which lead up to this state of things are various. Low prices for trees always follow correspondingly low prices for fruit, and vice versa. A large demand for trees in a few years begets an over supply of the commodity, and a slump in the prices. Oregon has shipped millions of trees into this State, and at prices which could admit of no profit to the grower. The farmer who thinks the nurseryman is making money too fast plants a lot of peach seeds and buds the trees during the summer. He makes nothing himself, and prevents those who follow the business from selling at a profit.

The planting public may be benefited by these low prices, temporarily, but, as in all other lines of business, cheap trees may be the dearest in the end.

Unless some care is given to the fruit tree stocks a vigorous and prolific orchard will be the exception rather than the rule. Twenty years ago several nurserymen raised seedlings for their own use and for sale; the cheap imported French stock put a stop to that, and now California is entirely dependent upon other States or countries for pear, apple, cherry and plum stocks. This ought not to be, and I believe the time will soon come when a nurseryman who will grow and select his own stocks, and so advertise, will readily obtain 50 per cent more for his trees than for others which cannot be so guaranteed.

INFLUENCE OF THE STOCK.—It is accepted by all horticulturists that the stock exerts a certain influence on the graft or bud inserted into it. This may be to dwarf the tree, to give it added vigor, or to adapt it to the soil or climate. In like manner, disease, particularly that which is inherent or hereditary, will be communicated between stock and graft; hence the importance of grafts or buds from healthy trees worked only upon healthy stocks.

Millions of seedlings which are being used as stocks for fruit trees are not healthy, and it is only the exceptionally favorable conditions which exist in California that prevent, in a measure, the more noticeable effects in our orchards. As the land becomes weakened by continued cropping, the effects of poor stocks will soon be seen. The reasons are, mainly, the demand for cheap trees, and the fact that many California nurserymen are so-called because they have rented some land and planted a certain acreage of seedlings for budding; they have had no previous training or experience, and at the turn of the wheel they are just as likely to boom some oil stock, plant sugar beets or marry a rich widow. In other words, they are not nurserymen or horticulturists, and never will be.

To grow apple seedlings that are healthy and free from aphid it is essential, in the first place, that the seed be good and plump, and not taken indiscriminately from any and all varieties. Seed from the crab-apple tree is by some considered the best. In the second place new land must be used—away from old orchards—and open to the full sweep of the wind; a rich river bottom is generally the best, and in the third place, the seedlings must be kept growing very vigorously until the fall, by thorough cultivation and frequent irrigation. For small plantings, the seed may be sown in boxes, and the plants transplanted when several inches high.

RESISTANT APPLE STOCK.—The late John Lewelling claimed that seed from Rawles Janet and Golden Russet produced roots which were free from the woolly aphid, and I have growing in my experimental grounds named seedling apples from New Zealand, which are said not only to be aphid-proof, but to bear fruit of exceptional quality.

It has been the practise for many years in Australia and New Zealand, and to a lesser extent in this country, to grow apples on Northern Spy stocks, which are aphid-proof. Some other varieties, such as Winter Majetin, are also used. The method is to graft scions of the Northern Spy on to small pieces of apple roots, and plant them in the ordinary way. Roots will grow from the graft, and the next fall the plants are taken up, the apple root cut off, and we then have a strong Northern Spy apple on its own roots. These are planted out, either in the orchard or in the nursery, and grafted with the variety it is desired to propagate.

For dwarfing the apple the Paradise stock is used;

this is a European wild apple, and it is propagated by layering; it is quite liable to the attack of the aphid, and ashes should be used freely when trees are planted, and afterward for several years. Apple trees on this stock bear at three years old and continue this prolific habit. The fruit is as large and fine as that on standard trees, and the tree has many advantages in being of small size, such as saving in labor at picking and pruning time, and in spraying for the codling moth. Dwarf apple trees are planted quite close and not more than ten or twelve feet apart.

STOCKS FOR PEARS.—Much that has been said of the apple applies also to the pear—except that the need of care is intensified, by reason of the aphid in this case being fatal to the tree. French pear seedlings have been badly infested with aphids for years and their importation should be stopped. Seeds of the Seckle pear produce fine seedlings and such varieties should be grown for that purpose, the pear itself being dried and the seed saved. Seedlings of Japanese pears have been used for some years; they possess great vigor, but their adaptability as stocks has not yet been fully demonstrated. They have been used mostly in the Southern and Southwestern States. Pears of this class, such as the Kiefer, Le Conte, Mikado, etc., root readily from cuttings, and such are used for stocks. It is not to be recommended, however, that cuttings be used for stocks in any case where a good seedling can be had.

Cherry seedlings are mostly imported, and, while nurserymen used to raise their own stocks from trees of Mahaleb and Mazzard, these have long since been grafted over and the French stock used. So far, the only pest coming with them has been an aphid which appears on the leaves soon after the plants begin to grow. The Mazzard stock is most in favor, and is undoubtedly the best in deep soils. Where the land has a clay subsoil and is shallower, the Mahaleb is better adapted, and the stock seems to have stood the drought of the last two seasons better than the Mazzard. If this is generally so, then it is the more valuable stock.

The peach is budded almost entirely upon peach seedlings, and but little need be said here, except that seedling or natural pits are the best to use. I have used the peach almond, but there are few of these trees left in the State. Stocks from this seed were of unusual vigor. Hardshell almonds are used by some, and are well adapted to dry, deep soils.

The apricot is budded also on the peach, and on its own seedling, the former being generally preferable.

BEST STOCK FOR PLUMS.—The best stock for plums is more of a debatable question. Theoretically, a fruit is better worked on a seedling of its own kind; but it is certain that some of these fruits succeed better on the peach. Seedlings of the Green Gage plum make good stocks, but these were scarce; so any European or domestic plum seed was used in the early horticultural days of California.

The Myroblan stock was introduced some twenty or more years ago, the St. Julian and Mirabelle being also imported. The former was found more generally adaptive; it did not sucker, and it was cheaper; it also could be grown from cuttings. Thus the Myroblan became the one plum stock for California, and it has been used almost exclusively.

Many varieties of plum outgrow it, which is an objection, and it dwarfs a tree to some degree. This fault is largely overcome, owing to the favorable conditions before alluded to. Trees on Myroblan are more liable to become bark bound, and, possibly by reason of the sap starting early, trees in a wet spring are, on Myroblan, more liable to die because of "sour sap." Further, Myroblan seedlings, as they come to us from France, vary more than any other. In growth, in color, in form, they differ widely. The wood of some is plain yellow, and from that, in every shade, to deep purple. Some grow upright, some spreading, and some actually of weeping habits. To use such stocks one cannot have a continuously uniform orchard. Those only should be used which are of vigorous, upright growth, but the public demand is for cheap trees, and the demand must be supplied.

Prof. Bailey of Cornell has traced the history of the Myroblan. It is very interesting, and goes back as far as 1601. Time will not permit of more than reference to it. Those who wish to can read it in Bulletin 38 of the Cornell University Experiment Station.

THE MARIANNA.—Of late years, owing to a growing disfavor in behalf of the Myroblan, cuttings of Marianna have been largely used as stocks for plums. This is believed to belong to the same species as the Myroblan, but possibly a hybrid between it and Wild Goose. After experimenting with it, however, I find no advantage over Myroblan, and a serious drawback, as with all cuttings—an imperfect root system. It is not grown extensively enough to get seed, and such would be much the same as Myroblan. Cuttings from Primus Triflora, the species which is generally known as Japanese plums, but which originally came from China, root with ease, and some varieties may be found which will make a good stock.

OTHER PLUM STOCKS.—Luther Burbank believes that a hybrid plum, with Japan blood, will be the universal stock for stone fruit, such as peaches,

almonds, plums, etc." He is making some tests in this line.

J. W. Kerr of Maryland, who catalogues nearly 400 varieties of American plums, and who is recognized as an authority by such men as Prof. Bailey, Prof. Waugh and others, writes me that he much prefers good seedlings of Myroblan to cuttings of Marianna. He says that seedlings of the Wayland group of plums make good stocks and do not sucker, but, after all his experience, he comes to the conclusion that, "for good, sound orchard trees, my experience begets a decided preference for trees root-grafted on peach."

Of course, there are some varieties of plum that do not make a good union with the peach, but all of the Japanese plums, French prunes, Imperial prune, Burbank Sugar prune, and most other plums succeed on peach trees. A root graft makes a cleaner, straighter tree than a budded tree, and roots will grow from the point of union, thus giving some of both plum and peach. My own experience here coincides with that of Mr. Kerr, and I would unhesitatingly recommend the peach stock for plums, or prunes, on any good fruit land.

What is known as "double working" is a plan by which a tree may be made more adaptive to the various conditions. For instance, such a variety as the Italian prune (known here as Fellenberg) is grafted or budded on peach stock, and subsequently again grafted, some 2 or 3 feet from the ground, with any other variety of plum. Thus we have an exceptionally hardy and vigorous trunk to our future tree; one that is less liable to sun-scald, to be "bark bound," or any other ailment. Further, this enables us to grow such varieties as Robe de Sargent, Yellow Egg, etc., on a peach root on which they could not be directly worked, owing to non-adaptability of stock and scions.

The planter should always visit the nursery from which he expects to get his trees during the growing season. He should learn what he can about stocks; in short, use intelligence in this as in other business matters.

The nurseryman should only grow what it is for the best interest of the orchardist to plant, and he should be encouraged to do so by closer mutual acquaintance, and a willingness on the part to pay a fair price for a good article.

The Value of Improved Fruit Varieties.

By LUTHER BURBANK of Santa Rosa at the Fruit Growers' Convention

The time is not far back when perseverance was the usual price of success, but we now live in a time of great activity and with rapid and astonishing changes in every department of life which makes adaptability of even more importance than perseverance. No one can doubt that these facts apply to horticulture, and especially to fruit growing, for in these employments most rapid strides have been made during the last ten years of the passing century. The fruit grower of to-day must have the ability to adapt himself to new methods, new fruits and new markets. By means of cold storage and rapid transit, the finest fruit from every land can be found in any large market, both in and out of season, for, while the fruits of one hemisphere are first waking from their winter sleep, in the other the summer sun has done its work and the ripened fruits are on their way to distant markets.

With the world as a market, competition is keen and only the best fruits in the best condition will pay. Fortunately, it generally costs much less per ton to produce large, first-class fruit than to produce the poorest and meanest specimens that are ever offered. Small fruit exhausts the tree much more rapidly than large fruit, as one pound of skin, stones and seeds represents at least ten or twelve pounds of fruit pulp. It will thus readily be seen that improved varieties which produce uniformly large, fine fruit are more economical manufacturers of fruit and also that the product is always more salable; the difference in many cases will decide between success and failure.

GOOD GROWTH.—The tree which needs a great deal of pruning to keep it in proper form or vigorous health should be replaced by one which has a better habit of growth, for every ton of wood taken unnecessarily from an orchard represents at least as much in weight of fruit. What a fearful tax this alone is on the fruit grower—enough wasted here also to make the difference between success and failure.

Many varieties have two or three superior qualities, but woefully lack in many others. Some have a very weak and imperfect root system no matter on what stock they may be grafted; others have scanty foliage, which readily falls a prey to drought, fungus or insect enemies.

Others are especially subject to blossom blight by late spring frosts, parching winds or rains; still others, though bearing the best of fruit, are so sparing of it that they are outstripped by others of less value. Numerous other faults are too well known to all observing fruit growers.

REGULAR BEARING.—The fruit grower of to-day is strictly a manufacturer, and should have the latest

and best improvements. The manufacturer of pins and nails would not long tolerate a machine which failed to produce pins and nails every other season, or one which produced even occasionally an ill-assorted, rusty, unmarketable product; and revolutionary as it may at first thought appear, there is no good reason for permanently producing poor fruit, for in time new trees will be produced which will bear good fruit with the utmost regularity and precision. Of course, there never can be any one variety which will be the best for all purposes, but it is perfectly possible to produce varieties which, for their own special use, can be relied upon to produce full crops of the best fruit without fail. All this must be done by careful selection and breeding.

THE MODERN METHOD.—With our present knowledge more advancement can be made in ten years than could be obtained in as many centuries by the usual custom for ages past of selecting chance seedlings as they appear here and there. Prof. Bailey truly says: "Intelligent selection, having in mind an ideal form, is man's nearest approach to the Creator in His dealings with the organic world;" and Darwin says that "The key is man's power of accumulative selection." Both might have said "combination and selection," for in practical field work it is first necessary to combine the best qualities of two or more species or varieties before selection can ever be of much value. When the combination has been judiciously made the work of centuries can be done in as many years; and with the further knowledge that when an organism is removed from its old restraining agencies, and given every advantage in the new ones, all variations have an opportunity of asserting themselves, and the work becomes still more simplified in the hands of the operator.

By the application of these well-known scientific facts to practical, every-day field work, results have lately been obtained which are nothing less than astounding, and we may expect to see as great advancement in the production of horticultural wonders as has been seen in the mechanical and chemical application of electricity.

THE WRITER'S VARIETIES.—By request, I here discuss the merits and defects of some of my own fruit productions and introductions. Among the first plums which were imported and introduced from my establishment, the best known are Abundance, Burbank, Sweet Botan and Satsuma.

Abundance and Burbank thrive almost everywhere, generally resisting spring frosts while in bloom. The Burbank is now grown extensively in every country where plums are grown, and in some places where no other plum will thrive. In South Africa, Australia and New Zealand it is planted by the hundred thousand, and is generally spoken of as the most reliable and profitable of all plums for canning, shipping and home use. The Abundance, though not of as high quality, gives universal and unbounded satisfaction. The Sweet Botan, though not as well adapted to general culture in all places, is grown for home use and for near markets far and wide. The Satsuma, though nearly or quite a failure in some places, is a grand success in others as the standard shipping, canning and jelly plum. All these except the Burbank are greatly surpassed in productiveness, size, beauty and quality by the newer hybrids and cross-bred produced since 1890, and mentioned below.

The Giant prune was introduced in 1893 as a market and shipping variety, but it has also proved to be one of the very best of canning plums, and is rapidly coming into prominence not only in California, but in the Eastern and Central States and the southern hemisphere. The tree is a good grower and constant and abundant producer.

WICKSON.—Introduced at the same time, is now universally grown, and wherever offered in any market has a readier sale and brings a higher price than any plum ever before known. Growers who invested in this variety have made large profits, as it has found a ready sale at prices never before realized for any plum.

GOLD.—Sold to Stark Bros., Louisiana, Mo., and introduced the same season, was recommended as the largest of the hardy varieties for the cold Northern States, and it has proved hardier, larger, better and more valuable than claimed. As better varieties can be grown in our mild climate, I do not specially recommend it for California.

SPLENDOR.—Introduced by the same firm. In some places this has not met with favor on account of its having to be picked instead of dropping when ripe, like the Petite prune, and for this very reason is prized by others, who claim that the difference in expense of gathering is more than made up by the better product. It shrinks slightly more than the Petite, but even then runs larger and is of much better quality for cooking. The tree is a heavier and more regular bearer, but has now been eclipsed by the Sugar prune in productiveness, earliness, size, flavor, sweetness and value of product when cured.

SHIPPER.—Sold to and introduced by John Lewis Childs of New York, is particularly valuable on account of its firm flesh. It is a large, handsome, apple-shaped plum, ripening at midseason.

DELAWARE.—Sold to same party, is a very dwarf plum in tree, but not in fruit, which ripens very

early, and is large, delicious and abundant. No better plum is to be found for early home use.

HALE.—Sold to J. H. Hale of South Glastonbury, Conn. A tremendous bearer. The fruit is of size, form, color and quality of Imperial Gage. Stone much smaller; one of the Japanese varieties.

APPLE.—Midseason, an extremely large stem; form, color and general appearance of an apple. Rich reddish purple; flesh firm, pale red, with marblings of pink, rich, high flavored sweet or subacid. Tree vigorous and productive; one of the best for shipping or any other purpose.

AMERICA.—Of the same parentage and similar to Gold, but five or six weeks earlier.

CHALCO.—A cross of Prunis Simoni and Burbank. The fruit which ripens just before the Burbank; is large, flat, like a tomato, reddish purple; sweet, firm, fragrant, with yellow flesh and small seed. Simoni will never be grown for any purpose where this is known, for in every possible respect it is its superior.

PEARL.—A seedling of the French prune, much larger, skin white, flesh semi-transparent, very sweet and aromatic; about a month earlier than the French prune, but more difficult to cure. Specially valuable for home use.

OCTOBER PURPLE.—Introduced by Hoyt's Sons, New Canaan, Conn. Is a very productive, deep purple plum of the Japanese type, ripening very late in the season, of most excellent quality and a good shipper.

STILL NEWER ONES.—Sugar prune, Climax, Sultan, Bartlett and Shiro plums, all introduced last season, need no special mention at this time, as they have yet to make their record outside the confines of my own grounds. I can only add that they are the cream of all the hundreds of thousands of the best hybrid and cross-bred plums with which I have been laboring constantly for the past sixteen years. I do not say that better ones will not be produced, for I have no doubt there will be, but at present I would plant none but these, and as I am requested to come here to answer your questions regarding them I need say no more, and can only hope that they may prove to be even more valuable to the grower, shipper and consumer than have been those which have already left my hands to receive the tests of various soils, markets and uses, and the greater test of time.

It has been well said that it were better for a man that a millstone be hung around his neck and that he be cast into the sea than that he should introduce a fruit or flower which should prove to be of no value. In the introduction of a new fruit or flower no one who has not been through the experience can fully appreciate the sense of responsibility, and no one can more deeply lament a failure than the introducer. The reception given my own introductions of the part leaves no great fear of the future in that respect.

THE POULTRY YARD.

Doctoring Poultry.

A writer in the Sonoma county Farmer dissents from the popular conception of the hatchet as a panacea in the poultry yard. He writes:

In asking the question, "Does it pay to render medical treatment to poultry?" of farmers and poultry raisers in California, I have usually received the answer that when they found a fowl sick they amputated its head the first thing.

Now, a man owning 500 or 3000 fowls, and hiring help to care for them, may find it economy to pursue such a practice, but to small dealers, or farmers who have selected their eggs with care and started with blooded fowls, and cared tenderly for their chicks until they are just ready to give them some returns, and then see one here and another there sickening and dying, this question will come home with its full force and meaning.

As for myself, I have found that it is not only profitable, but very simple and easy, to doctor sick fowls. After witnessing the death of three nice pullets, I concluded to test the result of medication upon them.

KEROSENE FOR THROAT TROUBLES.—The next that fell ill was a fine full-blooded Plymouth Rock rooster, ten months old, that was attacked with what in a person seemed like quinsy; his throat was badly swollen and we could hear him breathe from the poultry yard to the house. We caught him and put him by himself and gave a half teaspoonful of kerosene oil twice a day, at the same time bathing his throat and the back of his neck with spirits of turpentine and lard. Also twice a day gave a pill of sulphur and lard, mixed, about the size of the end of a man's finger, and with a stiff feather stripped to within about an inch of the end, saturated in kerosene oil, swabbed the throat and passed it a little down the gullet, turning it several times round, which will cleanse and mediate the upper part of the windpipe or air passage, which is very necessary, as the epiglottis and larynx are the organs always involved, similar to croup in children.

NOURISHMENT OF SICK FOWLS.—Another thing as necessary as medical treatment is to see that the

bird is well fed. In this case I put down corn, rice, bread soaked soft, mush, and, as it improved, wheat and corn.

The reason for urging the necessity of stuffing, or, in other words, involuntary feeding, is that in almost all cases of throat trouble it will be found impossible for the fowl to feed itself, as the tongue is rendered useless in the prehension of food on account of a sort of dry scab on the end of it, which, when the fowl has picked up the food with its bill, will push it a foot or two away, and thus starvation will follow. To remove this difficulty open the mouth and, with a pen-knife, carefully remove the scab, and in two or three days you will be rewarded by seeing the fowl feed itself.

Young vs. Old Fowls for Laying.

F. E. Emery of the North Carolina Experiment Station, at Raleigh, has just published a bulletin detailing the results of an elaborate test of fowls in feeding and laying. His carefully prepared tables show that for high production, weight of eggs produced, as well as for economy in production, pullets far outstrip hens.

The greatest production of eggs from pullets was made in this order: Light Brahma, Silver Laced Wyandotte, Black Langshan, Barred Plymouth Rock and Single Comb Brown Leghorn. White Wyandotte, White Plymouth Rock, Black Minorca and Buff Cochins are at the foot of this list.

Among the hens late hatched Barred Plymouth Rock leads, with Black Langshan and Brown Leghorn, followed by Barred Plymouth Rock and Buff Cochins, in this order. White Wyandotte and Light Brahma foot the list.

The greatest production of weight of eggs brings the birds in a little different order. Among the pullets this order is: Light Brahma, Silver Laced Wyandotte, Black Langshan, Barred Plymouth Rock, White Wyandotte and White Plymouth Rock, with Black Minorca, Leghorns and Buff Cochins last.

In production of weight of eggs no hens were equal to the pullets of the same breed, except Brown Leghorn and Buff Cochins, and these were the poorest producers of weight of eggs.

Now, to change from numbers and weight of eggs produced to economy of production, a marked difference will be noted. This phase may be shown best by percentage of value, market value for numbers, slightly varied by the time eggs were received, the January and June eggs having brought one-fourth of a cent each more than the other months, and intrinsic value as calculated from a standard weight and compared with cost of food for the breed.

	Per cent of Market Value of Eggs Produced Above Cost of Food.	Per cent of Value of Eggs Produced by Weight Above Cost of Food.
PULLETS:		
Single Comb Brown Leghorn	182.8	198.2
Silver Laced Wyandotte	113.9	196.8
White Wyandotte	99.9	183.1
Black Langshan	75.6	155.8
Barred Plymouth Rock	45.5	109.4
Light Brahma	25.9	80.7
Black Minorca	20.7	94.9
White Plymouth Rock	20.9	75.8
Buff Cochins	3.4	49.9
HENS:		
Single Comb Brown Leghorn	80.8	140.2
Barred Plymouth Rock (late hatched)	63.8	130.6
Black Langshan	14.7	86.3
Buff Cochins	4.2	38.1
Barred Plymouth Rock	11.9	37.6
White Wyandotte	11.8	24.2

The leading breeds in this comparison are Brown Leghorn, Barred Plymouth Rock (counting the late hatch hens only), Black Langshan and White Wyandotte. If Silver Laced Wyandotte were represented by mature fowls as good in proportion as the pullets they would stand second best in rank in economy of production.

As far as this record goes it shows that for high production, weight of eggs produced, as well as for economy in production, pullets far outstrip hens.

Prevention of Rot in Potatoes.

Consul Hughes sends from Coburg an account of a simple method of preventing rot and other diseased conditions of winter seed potatoes which is in use by the peasants of Thuringia. Those potatoes that rot easily in the cellar in winter are made better able to resist diseased conditions and cold by being laid in a sunny place, as far apart from each other as possible. They are turned over morning and night until they become thoroughly green, and are then placed in the cellar for the winter. Potatoes treated in this manner do not rot and can stand a great amount of cold without freezing. Early potatoes thus treated do not sprout in the cellar, and so retain their full strength. In February the potatoes are taken from the cellar and put in a partially warmed room until planting time. When planted they will sprout stronger and quicker than potatoes not so treated, and the crop will be larger and better.

FRUIT MARKETING.

Bleaching Walnuts.

By J. B. NEFF of Anaheim at the Farmers' Clubs Convention, Pasadena, January 2d.

In June, 1899, the Deciduous Fruit Association of Anaheim requested the agricultural experiment station of the University of California to make some experiments in bleaching walnuts. The request stated that the bleach must be speedy, must not injure the walnuts and must be cheap.

About 100 pounds of walnut culls were sent to be experimented upon, as that was the only kind to be procured at that time of year, and as the result of their work two formulas were sent which promised good results.

When the season arrived for bleaching walnuts the association manager made some further experiments on the lines suggested by the University, and concluded that the best results were obtained by using twelve pounds sal soda, sixteen pounds chloride of lime and three-fourths pound sulphuric acid, 66° B, in fifty gallons of water.

TO PREPARE THE BLEACH.—To prepare the bleaching solution proceed as follows: Dissolve the sal soda in hot water and pour into a hardwood barrel having a wooden faucet about 5 inches above the bottom. Place the proper amount of chloride of lime in a light-bottomed box and reduce it to a paste by using a hoe and a small quantity of water. Then put the paste into the barrel with the dissolved sal soda, and fill to forty-five gallons with clear water. Mix it thoroughly and allow it to stand forty-eight hours before using, so that all the sediment may be on the bottom and the liquid clear. When ready for use pour five gallons of water into an earthen jar and add the sulphuric acid very slowly—a few spoonfuls at a time—until all is added.

How to Dip.—Have wooden baskets or crates made with covers to contain the walnuts, and have a wooden box to contain the bleaching solution large enough to hold sufficient solution to cover the crate of nuts. Pour enough of the soda and lime solution into this box to cover the crate, and add about one-twentieth as much of the diluted sulphuric acid. Dip the crate of nuts into the mixture and keep it moving slightly for about ten seconds. Then lift out and set on a drainboard sloped so as to drain back into the box, in order to save the mixture. After the nuts are drained sufficiently dip them into a tank of clear water and allow them to drain again before pouring into the drying trays.

Small quantities of the diluted sulphuric acid must be added from time to time as needed, when it takes too long to bleach properly, and the box must be kept filled to the proper depth with the solution from the barrel.

The bleaching is done by the chlorine which is liberated by the sulphuric acid, and a sufficient quantity of acid must be added only for immediate use, otherwise the chlorine will be liberated too fast and wasted.

In the course of continued use the solution in the box will become too weak and must be emptied, the box cleaned and refilled. This must be done about twice a day with clean walnuts, but oftener if the nuts have not been properly cleaned in the orchard.

All ordinary stains will be removed, but sun-burned and diseased nuts will not be bleached. These must be picked out of the trays by hand. The color will be the natural color of the walnuts, and all will be bleached alike if care is taken to keep the mixture of proper strength and the walnuts immersed the same length of time.

THE CHEMISTRY OF THE BLEACH.—Nothing but wood or earthenware must be used in handling the mixture, or the proper result will not be obtained. This mixture is perfectly harmless and cannot injure the walnuts in any way.

By mixing sal soda and chloride of lime in solution there is formed carbonate of lime—the white substance which settles in the bottom of the barrel and is discarded—and two water soluble compounds, viz: sodium hypochlorite and common salt (chloride of sodium). The sulphuric acid is mixed in this clear bleaching compound, which contains the two sodium salts. This mixture can contain only Glauber's salts (sulphate of sodium), common salt and the gases chlorine and oxygen.

Thus it is readily seen that all of the sulphuric acid is destroyed, or, rather, converted into a water soluble salt (Glauber's), and that there cannot be any sulphuric acid, as such, left on the nuts.

CLEANING BEFORE DIPPING.—In order to prevent the waste of the mixture and to get the best results, the walnuts should be all washed as they come from the orchard. This can be cheaply and easily done in a rolling screen made of 3-inch square-mesh wire netting, 4 feet long and 2 feet in diameter. This should have a piece of pipe over the screen perforated with 1/4-inch holes, 4 inches apart, and connected by a hose to a tank, so as to have a steady supply of water. This kind of screen will hold about 100 pounds of walnuts at each washing. The time required for washing is usually very short, but can be determined by the

appearance of the water as it runs off the walnuts.

The cost of materials for bleaching is about 40 cents per ton, and the cost of handling is about the same as when sulphur is used. This latter cost depends greatly on the facilities at hand and the quantity of walnuts to be handled.

Call for Fruit Growers' Convention.

The following has been issued to the growers of deciduous fruits in California:

At the State Convention of Fruit Growers, held under the auspices of the State Board of Horticulture at San Jose December 12th to 15th, 1899, the subject of forming a Pacific Coast Fruit Association was discussed, with the object in view of combining the growers in some form of organization through which they may dispose of their fruit at more profitable prices. The convention resolved to call the fruit growers together for this purpose, and appointed a committee to issue the call and make necessary arrangements.

In accordance with these instructions we hereby call the fruit growers to meet in convention at San Jose, Cal., January 15th and 16th, 1900, at 10 A. M.

We send herewith a copy of M. Theo. Kearney's address, which was read before the convention (and printed in the issue of the PACIFIC RURAL PRESS of Dec. 23, 1899). In this he sets forth the workings of the Raisin Growers' Association of Fresno, which has just ended a profitable season, and whose form of organization may be adapted to our needs.

The trend of thought at present is toward an association with a membership without capital stock, under the co-operative law of 1895. We urge you in our common interests to attend this convention and bring with you your best thoughts and clearest understanding of the subject in hand. Let every Grange, every Farmers' Club, every Fruit Growers' Association and every school district take prompt measures to send delegates. If we so desire, we can take complete control of our product and determine its selling price.

Those of you who realize how much there is at stake, how great the loss will be if matters are allowed to proceed as in the past, and how great the gain to all individual interests and to the State at large if the fruit growers can be induced to organize, should take this matter in hand with the firm determination to win.

S. P. SAUNDERS, Chairman of Committee.

ALFRED BARSTOW, Secretary.

San Jose, Dec. 27, 1899.

THE STOCKMAN.

Modern Range Methods.

We are frequently urging wider attention to the live stock interests and opportunities of California, because we think the State is not doing all that it profitably can in this direction. One way to proceed aright in this line is to know how others are successfully doing it, and though there is little in common in natural conditions in California and in the great range States, still some suggestions can be had from their methods. Director S. M. Emery of the Montana Experiment Station made many friends in California during his visit last summer, and our readers will have greater respect for the following statements because he made them. In the Orange Judd Farmer he gives an account of modern methods in the cattle industry of the Northwest.

A GLANCE BACKWARD.—Years ago (in 1882) the cattle interests of the upper Mississippi valley were offering great promise to the owner. All at once a break came in prices which was hard to explain to the man whose knowledge of the matter extended only to his physical horizon. The following year the Director of Farmers' Institutes of Minnesota, O. C. Gregg, made the statement that the depression in domestic herds was owing solely to the avalanche of cattle which had swept down out of the great plains country onto the Eastern market, and so it was. Extensive herds began to move from Texas up to the upper Missouri country in 1878, '79 and '80, and the Eastern market movement began to be felt in 1881, '82 and '83.

Periods of interruptions to shipping have come at times, notably in the spring of 1897, following the severe winter; but one year with another the output of the Montana ranges has been about a quarter million head of beeves, and will so continue for many years to come. Montana will always be a country of open summer ranges. Cattle, sheep and horses will find summer sustenance from meadows which the hand of man has never sown, but which he nevertheless will harvest in the most economical method—grazing it off with his live stock. While the open-range industry is being materially abridged, especially in southern Montana, and in all of the foothill country wherever lands can be irrigated and homes made, there are still millions of acres which will always be valueless as grain lands for the lack of water for irrigation.

RANGE METHODS.—To the Eastern farmer the cattle business, as here conducted, seems like offering a premium upon disaster. A hundred cows and calves are shipped in May, are branded and driven out to some favorable feed and water ground and are turned loose; for a few days they hang closely together, and then they begin to separate into little related bunches,

that is, if they were brought out of the same herd, and the 200 head may be scattered over a territory fifty miles square. Occasionally the cowboy traverses the range to keep half an eye upon them; of course, the wolves get some, an occasional one is butchered by rustlers. Fall comes and they are rounded up with others, are counted after a fashion and are again turned adrift to rustle for the winter. A calf round-up comes the following May, and in the spring the calves are branded and are again thrown onto the range to suit their own sweet will as to where they go, or how long to stay. When fall comes the beef round-up is on, and the big lusty steers, two past coming three, are started for market.

HOW THE LOST ARE FOUND.—A small per cent of the first stock of steers may be found on their own range, but they may turn up 100 or 200 miles from where they were turned loose—that matters not. Inspectors of the Montana Cattle Association are at every cattle market in the United States, and, when a trainload of cattle arrives, all strays are culled out and sold by brand, and the proceeds remitted to the owner through the secretary of the association. This, regardless of the fact as to whether their owner is or is not a member of the association. Thus the only way one can lose marketable cattle by theft is for the thief to slaughter them and destroy the hides. The penalty for this is so severe that men do not dare to take chances on cattle thieving.

WINTERING.—I was offered the following terms for wintering cattle: Cows, with spring calves, big lusty fellows ready to wean, were to be turned inside fenced pastures (these are wire fences thrown around unbroken lands on which is left standing the sun-cured bunch grass and blue-joint hay, which if cut in season would turn off a ton of hay to the acre), and fed blue-joint hay (a wild grass of the highest nutritive value), at the rate of two tons to the cow and calf, for \$9. This markets the hay at \$4.50 per ton and throws in the use of the pasture, the care in feeding and salt for nothing. Counting the great proportion of bright, clear days when the ground is free from snow, the calf would come out fat and lusty (calves are separated from cows and get better attention), and the cows would be in fair condition to calve and to go out to new grass in the spring. The contract would also guarantee the cow attention during the calving period, supplying the sheds under which to calve. This would be an average of \$4.50 per head that it would cost to carry through the winter, and \$2 more will summer them, so that \$6.50 may be said to represent the cost of the annual maintenance of the average animal.

THE CROP.—By having calves come in the spring it is possible to turn them off at the end of three summers and two winters at a cost of say \$15 for maintenance. To this should be added interest upon the cost of the dam and sires and a reasonable per cent of loss from age and severe seasons, but it is safe to say that \$25 would cover amply the cost of the animal, which would sell for \$37 net on the range to the owner. This shows a profit of 50 per cent and is a fair working margin for such a business. There is no question but that the range cattlemen will have much the best of it for many years over the one who carries his herds inside fences the year around, for, strange as it may seem, these dry, thin-grassed plateaus produce such cattle as can never be grown inside the best of blue-grass pastures.

THE WESTERN PASTURES.—A great deal of care has been taken in the selection of prepotent sires, and many pure-bred bulls are turned loose annually on the ranges. Given 100 Shorthorn, Hereford or Polled Angus half-blood cows, on these cross pure-bred bulls of the same strain as the dams, and at six months of age the early spring calves will show up quite as likely as if they were the pampered descendants of prize-winners being fitted for the show ring. Unless one has had experience in feeding Montana hay or in grazing the natural meadows, he has no idea as to the difference between this feed and the best Eastern pastures.

One style of cattle ranging is that which fences them for six months and leaves them on the open for six months. This of course is only applicable to comparatively small herds, but the number and size of such is being constantly augmented. With this system there is a much smaller per cent of dry cows, as the bulls can be kept inside the fields and can be under much better control.

A new departure in cattle raising is the winter feeding of alfalfa to steers. The result is very choice beef produced at a handsome profit to the feeder. More and more of this is being done, and the effect will soon be felt upon the Mississippi valley corn fields. Personally I would prefer alfalfa-fed beef, fed upon the dry, clean Montana feed lots, to the corn-fed beeves of Illinois and Iowa—standing as the latter do much of the time in the muck and mire of swine yards and compelled as they are too often to consume food more or less filthy from its nasty environment. This winter feeding of beeves is going to add at least \$10 per head to the profits of the Montana cattle grower, for he will realize not only a good price for the hay consumed, but he will experience a relief from the depreciated prices incident to throwing a quarter million beeves onto the market within three months. Cattle growing and feeding will always be remunerative in Montana.

Agricultural Review.

ALAMEDA.

NEW CANNERY.—Alameda Encinal, Dec. 28: Two blocks of land have been purchased by Frederick Tillmann, Jr., of the firm of Tillmann Bendel & Co., and it is announced that the purchaser intends to put up one of the largest canning establishments in the State.

WINE EXHIBIT AT THE PARIS EXHIBITION.—Livermore Herald, Dec. 28: The wines of Livermore valley are to be seen at every exposition of note, and the World's Fair at Paris next year is no exception. Not every grower will be represented, but a sufficient number will make displays to show to advantage the various types which have done so much to make the valley famous. From the list published by authority of the commissioners we note the following: C. L. Crellin of Ruby Hill vineyard, five varieties; A. Duval of Chateau Bellevue, one variety; Theodore Gier, product of Dos Mesas vineyard, five varieties; Julius Paul Smith of Olivina, eight varieties. It is likely that this list may be supplemented by the product of several other vineyards. All of the wines sent for exhibition will be handled exclusively by the commissioners.

FRESNO.

CROP OUTLOOK.—Sanger Herald, Dec. 23: The work of putting in crops is proceeding rapidly. On sandy land the farmers are plowing, and much of the grain is up and in fine condition. Many of the farmers on the adobe lands are plowing, although the ground is very wet and work is difficult. Wages on the farms are higher this season than they have been for many years. The current wages for men to drive plow teams and do general ranch work are \$1@1.25 per day and board. So far the season could not have been more favorable for feed and stock. The summer-fallow that was planted before the rains is looking fine.

HUMBOLDT.

CREAMERY PRICES.—Eureka Standard, Dec. 20: The prices paid by the Humboldt creameries, for the month ending Dec. 15th, are as follows: Minor, Loveren and Arcata creameries, 25; Harpst & Spring, 25½; Silva, 24; Humboldt and Diamond Springs, 25½; Grizzly Bluff, Phelston, Cold Springs and Red River, 26; Red Poll and Loleta, 25½; Madsen, 26½; Capital, 26.

MERCED.

PROFITABLE COWS.—Merced Sun, Dec. 22: The milk produced from three of A. R. Gurr's cows last month brought \$25.25, one of the cows producing \$9. J. W. Vaughn began the month with nine cows, adding two more, thus averaging about ten cows for the month. His check from the creamery was \$68.62, or \$6.86 per cow; in addition to which he had the use of the skim milk. Mr. Schmidt, superintendent of the Fountain City creamery, informs us that the cows brought from southern California last week are producing an average of 25 cents worth of milk per day, each. This is an average of \$7.50 per month per cow.

NAPA.

CELEBRATED CHRISTMAS PLOWING.—Napa Register, Dec. 29: The custom at Berryessa is to plow whenever circumstances permit at this season of the year, consequently the ranchers had their plows moving Christmas day. All rainy days are enforced holidays to the plowmen and teamsters in this region. They earn nothing and have nought to pay for their board, as the rancher stands the expense. So far this season the men have not put in half time, the ground being too wet to work teams on and not in fit condition otherwise.

CREAM OF TARTAR WORKS BURNED.—Dispatch from Napa, Dec. 29: The cream of tartar works at East Napa were burned this morning. The loss is estimated at \$10,000, partially covered by insurance. The building destroyed included the storeroom and the almond oil factory.

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland, O.

SAN BERNARDINO.

ORANGE SHIPMENTS.—Redlands Citigraph, Dec. 23: Nearly 1400 cars of oranges have been shipped East up to the present time—more than ever before up to the same date. Two years ago about 1300 cars went out, and last year about 1100 went East for the holiday season. In the early part of the season it looked as if the holiday shipments would be small, but early rains and propitious weather caused the ripening to be hastened several weeks.

SAN DIEGO.

LIGHT OLIVE CROP.—San Diego Union, Dec. 28: National City olive growers have a light crop this year. The lack of water last summer affected the trees and the customary large crop failed to appear. Warren Kimball, who has one of the largest and oldest groves in the county, gathered forty tons two years ago; this year his trees will yield three tons. The quality is better, however, than in seasons when there is plenty of water, as the fruit contains more oil.

SAN JOAQUIN.

EARLY GRAIN.—Stockton Mail, Dec. 27: Near French Camp may be seen a strange sight for this time of the year. It is oats and barley growing vigorously and headed out. The oats are three feet high and the barley a few inches lower.

GRAIN PROSPECTS.—On the adobe land very little has been sowed this year, and it will be too wet to plow for some time yet, especially if the foggy weather should continue. Farmers on that land have about given up hope of getting any wheat in, and it will soon be too late to sow barley. There was very little summer-fallow last year, as the land was almost all sowed to grain, the drouth of the previous year having given the land a good rest. As a result there will be an unusual amount of land summer-fallowed this year. That which can neither be sowed nor summer-fallowed will produce a good crop of hay, but the farmers do not think that hay will be a very profitable crop next year. Even in the sandy land about Lodi and Woodbridge comparatively little has been seeded, but the farmers in that vicinity feel but little uneasiness, as they do not require as much time to mature grain as is needed on the black land. Some of them are now plowing, but find that the damp weather interferes greatly with the progress of their work.

SANTA CLARA.

IRRIGATION AND FROST.—W. C. Anderson has had some very good experience in irrigation to prevent injury by frost. At one time, or perhaps more, his own was the unirrigated orchard, and his neighbor was more fortunate in having just applied water with a clear escape from frost. Last spring Mr. Anderson had his orchard about half irrigated when the severe frost came which destroyed so many apricots. He had been using the water for several days, and a part had been irrigated nearly a week, and from that down to about two days, when he transferred the water from the rear of the orchard to the front, and when the frost came there were about two rows of trees in the front which were quite wet from newly applied water. The result was that the irrigated half of his orchard at the time of the frost bore an abundant crop. The half not irrigated was almost a failure. There was some apparent effect on the two rows in front, irrigated last, but the success was not perfect. Neighboring orchards on all sides that had not been irrigated suffered a loss of practically the entire crop. Mr. Anderson concludes that if the land is only still damp from the effects of irrigation it is well protected, and he would prefer to have a few days elapse after irrigation than to have it applied the day before the frost.

SANTA CRUZ.

HORTICULTURAL COMMISSION ORGANIZES.—Watsonville Pajaronian, Dec. 28: The County Horticultural Commissioners met at Santa Cruz and organized by electing C. H. Rodgers of Pajaro as chairman and H. R. Dakin of Soquel as secretary.

GOOD SEASON FOR MISSOURI PIPPINS.—This is one of the seasons which is just right for the Missouri Pippin. In size, color and flavor it makes a splendid showing this year. Packers attributed its excellence this year to the fact that this variety was left for late picking. It is one of the best looking apples produced here.

BIG BEET YIELDS.—Here is another big beet yield showing: Eight acres of land, farmed by Chesley Stow, turned off 262 tons of beets this season—32½ tons per acre. James Redman, who had an immense crop, says he is confident that several patches of his tract have turned off 30 tons per acre.

SHASTA.

DIAMOND STOCK RANGE SOLD.—Red-

ding Free Press, Dec. 23: A deed has been filed wherein the San Francisco Savings Union transfers to the Cosmos Land & Water Company 8360 acres in the Bald hills. The land is part of the noted stock range formerly owned by Hardin & Riley, the Santa Rosa cattlemen. The price paid is quoted at \$39,200.

SONOMA.

VINEYARD COMPANY INCORPORATED.—Santa Rosa Press-Democrat, Dec. 23: Articles of incorporation of the Lenoir Vineyard Company have been filed. The capital stock is \$100,000, divided into 1000 shares of the value of \$100 each. The Board of Directors is composed of T. T. Overton, J. W. Oates, M. Prince, H. G. Hahman and J. R. Edwards.

SUTTER.

GOPHERS IN THE LEVEES.—Yuba City Farmer: One of the worst pests to levee builders is the gopher, and to his active operations in the embankments can be traced the loss of many thousands of dollars. In the levee districts competent men are employed the greater portion of the year in poisoning and trapping these animals, and to this work is due the splendid condition of our levees. In this district two men are kept constantly at work on the river levee and two more a portion of the year on the tule levee. When the first rise of water in the fall drives gophers out of the bottoms there is lively work for the gophermen, and as high as fifty gophers are caught in one day, besides many being poisoned. The gophermen, after catching the animals, fill up the holes and thus prevent the water getting into the levee when the freshets occur.

TULARE.

ORANGE SHIPMENTS.—Visalia Times, Dec. 28: Lindsay has shipped out eighty-three carloads of oranges and six of lemons this year. There will be about thirty-five carloads of Valencias to ship out in the spring.

ABUNDANCE OF FEED.—At this date last year sheepmen were scouring the country for feed and offering big prices for the privilege of grazing on wheat lands. Now sheepmen are independent and will not listen to the farmer who would like to have his grain crop grazed off. Wild feed is abundant and stockmen are very independent on the feed question.

PHENOMENAL TOMATO VINE.—Visalia Delta, Dec. 21: Mrs. Mattie Stevens has a phenomenal tomato vine, in that it has grown until the topmost branch is over 12 feet from the ground. The vine is loaded down with tomatoes of large size and extra fine flavor. The vegetable, notwithstanding the lateness of the season, is nicely colored and the skin is as smooth as one would wish for specimens to place on exhibition. The late frost did not seem to wither this vine in the least.

OREGON.

WHEAT FOR THE PARIS EXPOSITION.—Dispatch from Portland: There was shipped to the Department of Agriculture at Washington a large bundle of wheat in stalk, which is to form the centerpiece of

the American grain display at the Paris Exposition. The wheat was raised on the Oregon Railway & Navigation Company's experimental farm near Walla Walla.

WHEAT STATISTICS.—Oregon Agriculturist: The census of 1890 gave the total production of wheat in Oregon as 9,298,224 bushels. Four counties each produced over one million bushels. These were: Umatilla, 1,642,378 bushels; Linn, 1,116,074 bushels; Marion, 1,109,755 bushels; Polk, 1,014,580 bushels. At that time Eastern Oregon produced only one-third of the wheat crop of the State. In ten years wheat production has tended to decrease in the Willamette valley, but has greatly increased in eastern Oregon. Sherman county, which has for a number of years produced more wheat than any county in the Willamette valley, raised only 148,891 bushels in 1889. The total yield in eastern Oregon for 1899 was considerably more than twice as much as in 1889. The production of wheat for the whole State has increased more proportionately than the population.

WASHINGTON.

CATTLE GROWERS ORGANIZE.—Northwest Pacific Farmer: The cattle growers of Yakima have organized the Yakima Husbandmen and Cattle Growers' Association. D. E. Lesh was chosen president; James Wiley, vice-president; J. E. Shannon, secretary; and J. P. Marks, treasurer. The trustees are Matt Stanton, Frank Kandie, Dan Sinclair, J. E. Shannon and James Wiley.

WOOL IN DEMAND.—Seattle, Dec. 15: For two weeks past representatives of Eastern wool firms have been canvassing the wool-growing sections of the State in an effort to buy up next year's clip. In the Rainier reserve district advances have been offered at a full price, when delivered next summer, of from 17 cents to 20 cents per pound. The cause assigned for offering to buy in advance is that heavy orders have been received by the house reported for delivery next fall, and it is desired to make sure of a supply.

TREE INSPECTION.—Seattle Times: King County Horticultural Society, at its annual meeting held in Bellevue, decided to help Fruit Inspector Brown wage a vigorous fight against the introduction of pests into this State. Every effort will be made to protect the fruit industry and a vigilant outlook will be kept for infected importations. Arrangements have been made whereby every tree can be inspected the moment it arrives in the State, and if any disease is found the trees will be promptly burned. Several carloads of trees have been already destroyed and Fruit Inspector Brown has notified dealers and importers that if only a few diseased trees are found in a carload the whole will be destroyed.

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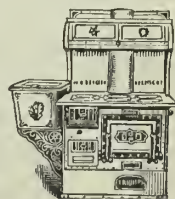
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THE HOME CIRCLE.

California's Yellow Poppy.

In meadows green, in forest glade,
By the wayside, in sun or shade,
Scattered by Nature's lavish hand
In wild profusion o'er the land,
Or, planted in the garden bed,
The yellow poppy lifts its head,
And shares with blooms of varied hue
The shower, the sunshine and the dew.

As evening shadows veil from sight
The rays that make all Nature bright,
And darkness falls upon the earth,—
As darkness rested on its birth—
And chilling winds or pelting rain
Threaten to make its beauty vain,
Instinctively it folds its leaves
And bids defiance to the breeze.

Then when the perils of the night
Vanish before the morning light,
And clouds disperse and melt away;
When Sol pours down intenser ray
And gentle zephyrs fan the air,
And bees and butterflies are there,
Its silken leaves again unfold,
Gleaming as bright as burnished gold.

So may we learn, by Nature taught,
To guard against the evils wrought
By dark temptation, fierce self-will,
And close each avenue of ill.
Then, when the new-born day has
dawned,
And darkness is to light transformed,
And self-will yields to higher power,
Hearts open, as the opening flower.

—S. L. Penryn.

Rosa of Tannenburg.

In a great stone castle in the midst of the deep pine forests of Germany, there lived, a great many years ago, the knight of Tannenburg and his daughter Rosa. It was in the days when the lawless nobles of the country were constantly quarreling with one another, each burning his neighbor's grain and stealing his cattle while the owner was fighting in distant wars.

The castle of Tannenburg was like all castles of that time, strongly fortified and surrounded by high walls and a deep moat. In an upper room, one warm summer day, Rosa and her father sat together. The knight had just come home from the wars, badly wounded, and Rosa, a fair-haired girl of seventeen, sat by him working over her gayly colored tapestry.

"Father," she said, "tell me the story of how you got the chain round your neck."

Rosa had heard the story a hundred times before now, but she never tired of hearing it any more than the old knight of telling it.

"When I was a page at court," began the knight, stroking his long gray beard, "a great tournament was given in honor of a French prince who came to visit our Emperor. There I saw your mother for the first time, and so lovely was she that she was elected to be the queen of beauty, and was to give the prize, a golden chain, to the victor. I loved her from the moment I saw her, and her beauty gave me such strength and daring that I came out first in the games, much to the chagrin of the

young Baron of Odenwald, who opposed me fiercely in the tourney. He was, like myself, a suitor for the hand of the queen of beauty, and when I finally won her for my bride he swore that he would have his revenge on me."

"But," interrupted Rosa, "his castle is only fifteen miles from us, and he has done us no harm yet."

"Yes," answered her father, "that was many years ago, and he has now a young wife and two children, but he still hates me bitterly and—"

A loud clamor in the courtyard interrupted the story, and, on looking out of the window, to their consternation they saw the very man they were speaking of, the Baron of Odenwald, and his soldiers marching up to the castle doors. The knight's soldiers were still at the wars and the few old men left to guard the castle had been easily overpowered by the fierce baron.

Rosa screamed with terror. She heard the tramp of armed feet coming up the stairs. In came the haughty Baron of Odenwald and ordered his men to bind and carry off the wounded and helpless Knight of Tannenburg. In vain were Rosa's tears and prayers. The unfortunate knight was hurried off, Rosa turned out of the castle, which was looted and then locked up, and the poor girl left weeping and desolate.

All night she wandered through the dark pine forest until she came to a charcoal-burner's hut, where she was taken in and kindly treated. Days passed by and Rosa longed to see her father once more, and perhaps help him to escape. Accordingly, one day she stained her face with brownberry juice, changed her own pretty dress for a peasant's coarse cotton gown, and with a large basket of mushrooms on her arm started off for the castle of Odenwald.

The sentinel, seeing only a harmless little peasant girl, let her pass over the drawbridge and through the castle gates. She walked up to the porter's lodge, where the porter's wife stood in the doorway scolding her children. The Baron of Odenwald was extremely fond of mushrooms, and the basketful was soon bought and paid for by the porter's wife.

"Will you not stay with me and help me look after the children and cook the food for the prisoners?" she asked after a few moment's chat with Rosa. "I need a young, strong girl like you and will give you a new dress every year if you will stay."

Rosa accepted this offer eagerly, and her duties, none too light, began that very day. She had to light the fire in the morning, dress the children, help the porter's wife cook the most unsavory soup for the prisoners of the castle and do many other things. One day the porter came to his wife and told her that he was obliged to go away with the baron for some days and that she would have to take the prisoners' food to them, besides cooking it.

"No, indeed," replied his wife, promptly, "there are murderers and thieves in those cells and I will not go near them."

"Let me go," begged Rosa. "I will do it for you."

"Very well," said the porter, rather surprised at her request, "come with me and I will show you how to unlock the doors."

Together they went down a winding flight of stone steps, opened a door heavily bolted and barred, and down a long, dark corridor, dimly lighted by the porter's lantern. On one side were small stone cells behind whose iron gratings wild, cruel faces gleamed in the light of the passing lantern. Hideous oaths and fearful laughter followed them, and Rosa shrank, frightened, to the porter's side.

"Do not fear them," he said, "they cannot possibly escape. This man, however, is good and gentle, and you can go right into his cell." He stopped in front of one of the gratings and held up his lantern. Rosa's heart beat fast and loud. There, on a wretched heap of straw, lay her father, asleep, pale and emaciated. She longed to call him, but remembered she must be silent before the porter, and they left him sleep-

ing and walked back through the long corridor, bolting the heavy door behind them.

The next day Rosa took into the prison the bowls of unappetizing soup, pushed one under every grating and finally came to her father's cell. Unlocking his door she rushed in and knelt by the sick man's side. "Father! father!" she cried. "Rosa!" exclaimed the knight, recognizing his daughter in spite of the brown stain and rough dress. He took her in his arms and together they wept over their terrible misfortune. Then Rosa told her father all her adventures since he had been carried off, until the sound of the great bell of the castle coming dim and muffled through the thick dungeon walls warned her that it was time to go back to the porter's wife.

Twice every day Rosa brought food to the prisoners and thus saw her father. Escape, however, was not possible. The walls were too well guarded, and as the days slipped by the poor knight grew worse and Rosa despaired.

One morning the castle was filled with noise and busy movement. The news that the baron was to return that evening with a large company of guests flew from mouth to mouth. So excited were they all that the nursemaid forgot her precious charges, the baron's two little sons, who were playing in the courtyard, while she gossiped with the scullery maid over the coming event.

A bright blue and yellow butterfly flew across the yard, and away went the two children after it. The butterfly settled for a moment on the edge of the bucket dangling over the well. The eldest of the children clambered up, stretched out his little hand to reach the gay plaything, lost his balance and fell in. The baroness at the window saw and fainted at the sight. Men and maids rushed up, and among them Rosa. Down into the dismal depth of the well they peered and saw that the little fellow's coat had caught on a sharp stone projecting half way down the well. Rosa saw that the coat was already beginning to tear; that there was no time to be lost, and jumping into the bucket told the men to let her down gently till she reached the boy. Soon the child was safe in her arms and the bucket with its occupants carefully brought up to the mouth of the well.

It was not many hours after that the Baron of Odenwald, sitting in the great hall of the castle with his guests, heard the story of his son's narrow escape from death and of Rosa's plucky act.

"Bring the girl here!" he commanded, and Rosa was brought in, her rough peasant dress contrasting with the gay costumes of the knights and ladies in the hall.

"Girl," said the baron, "you saved my son's life. Ask what you will of me and I will give it to you."

"Baron of Odenwald," answered Rosa, boldly, "there is one favor I will

ask of you. Give up your prisoner, the Knight of Tannenburg, to me."

"No, no! Not that!" frowned the baron.

A murmur went around the hall from the guests—"Your word!" Your honor!"—and the baron turned pale with chagrin and rage. By his order the wounded knight was brought up from the dungeon. Astonished and almost blinded by the bright light he gazed around him, whilst Rosa quietly put her hand in his.

"My daughter, what does this mean?" he said.

"His daughter," murmured the guests once more.

The whole story then came out, a reconciliation was effected between the knight and the baron and the property of the former restored to him.

Some days later Rosa and her father sat together in an upper chamber of the castle, the knight with the glow of returning health on his face, Rosa in a pretty little silk gown and the brownberry stain completely disappeared.

"Father," said Rosa, "this is a happy ending after all to the story of the golden chain."

"Yes, dear," answered her father, "I began the story, but it was my brave little daughter who brought it to this happy termination."

The Future of Children

A child's life may be blighted by the diseases of youth, such as Rickets, which is characterized by weak bones or crooked spine, and inability to stand or walk steadily, or Marasmus, that wasting disease characterized by paleness and emaciation, or Scrofula, a constitutional disease of the glands and neck.

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Washing Bedding.

Every precaution should be taken to keep the different kinds of bedding clean, as it is no light task to wash these heavy articles when they become too soiled for further use. If a strip of cheese cloth is basted across the upper end of blankets and comfortables where they come next to the face, they will be kept clean much longer and the covering may easily be removed and washed. Comfortables that are tied with yarn are easily ripped up when they are soiled, but do not attempt to wash the cotton, as it does not pay. Wash the outside and use fresh new cotton. Quilts should be washed quickly in tepid suds. If allowed to lay in the water some of the colors are sure to run. They must be rinsed thoroughly through two or three waters, and, if desired, a little cooked starch may be added to the last rinse water. Dry with the wrong side to the sun and stretch and pull occasionally, so they may dry smoothly. Blankets are never so pretty after they are washed, as they lose that dainty fluffiness that made them at first so beautiful. However, they must be washed when they are soiled, for the finer a wool blanket is the more apt it is to retain disease germs. To wash blankets, prepare an abundance of hot suds by adding a tablespoonful of pearl-ine to every pailful of water used. After shaking the blankets free of lint, lay them in the suds and let them remain for about an hour. Wash one blanket at a time, move back and forth and cleanse by rubbing with the hands. From this water lay them in a second, prepared exactly like the first and of the same temperature. Then rinse through two waters also of the same temperature. Drop a little indigo in the last water if the blankets are white. Rinse the blankets well in this and wring until as dry as possible. Stretch a strong clothes line so that the blankets may catch all the sunshine possible, and the warmer the sun the better; so select a sunshiny day for the purpose, that they may dry rapidly and without streaks. White woolen underwear should be washed in the same way and dried in the sunshine. The secret of washing blankets is to have the changes of water of the same temperature. Old blankets which have suffered much from varied baths of different temperature may be partially restored if washed in this way, though such sometimes need more than one washing. To wash a pillow tick, shake the feathers into one end, then rip open the other end and baste a flour sack or pillow case over the opening in the pillow tick. Shake all the feathers into the sack and sew up the end before removing the pillow tick. Wash the tick and put the feathers back in the same manner in which they were taken out. Feather bed ticks may be cleaned in the same manner by opening one end and sewing two sheets together to receive the feathers.

Girls of Japan.

The girls of Japan have dolls' furniture and dishes, and, of course, dolls. They have dolls that walk and dance, dolls that put on a mask when a string is pulled, dolls dressed to represent nobles, ladies, minstrels, mythological and historical personages. Dolls are handed down for generations, and in some families are hundreds of them. They never seem to get broken or worn out. They are kept for show; and, though the owners play with them, they do not dress and undress them and take them to bed. A good deal of the time they are rolled up in silk paper and packed away in a trunk. On the great festival day of the Japanese girls—the feast of dolls—there is a great show of dolls and toys, and it is the event of the year for the queer little black-eyed maidens. The feast of flags is the boys' great day; and they have banners, flags, figures of warriors and great men, swords, and other toys for boys. But the finest toy of Japan—as no doubt all you youngsters will agree—is carried about the streets by a man or

woman for any child to play with who is the owner of the hundredth part of a cent, or one "cash."

This is a small charcoal stove, a copper griddle, spoons and cups, and, above all, ready-made batter and sauce. The happy child who hires this outfit can sit down on the floor and cook and eat "griddle cakes" to its heart's content. Could anything be nicer?

The Art of Seeing.

We may see coarsely and vaguely, as most people do, noting only masses and unusual appearances, or we may see finely and discriminatingly, taking in the minute and specific. In a collection of stuffed birds, the other day, I observed that a wood-thrush was mounted as in the act of song, its open beak pointing straight to the zenith. The taxidermist had not seen truly. The thrush sings with its beak but slightly elevated. Who has not seen a red squirrel or a gray squirrel running up and down the trunk of a tree? But probably very few have noticed that the position of the hind feet is the reverse in the one case from what it is in the other. In descending they are extended to the rear, the toe-nails hooking to the bark, checking and controlling the fall. In most pictures the feet are shown well drawn up under the body in both cases. People who discourse pleasantly and accurately about the birds and flowers and external nature generally are not, therefore, good observers. In their walks do they see anything they did not come out to see? Is there any spontaneous or unpremeditated seeing? Do they make discoveries? Any bird or creature may be hunted down, any nest discovered if you lay siege to it; but to find what you are not looking for, to catch the shy winks and gestures on every side, to see all the by-play going on around you, missing no significant note or movement, penetrating every screen with your eye-beams—that is to be an observer; that is to have "an eye practiced like a blind man's touch"—a touch that can distinguish a white horse from a black—a detective eye that reads the faintest signs. When Thoreau was at Cape Cod he noticed that the horses there had a certain muscle in their hips inordinately developed by reason of the insecure footing in the ever-yielding sand. Thoreau's vision at times fitted things closely. If our powers of observation were quick and sure enough, no doubt we should see through most of the tricks of the sleight-of-hand man. He fools us because his hand is more dexterous than our eye. He captures our attention, and then commands us to see only what he wishes us to see.—John Burroughs in Century.

There once was a couple of bears,
Who were eating baked apples on shares.
When apples were gone,
They ambled along
In search of a dish of baked pears.



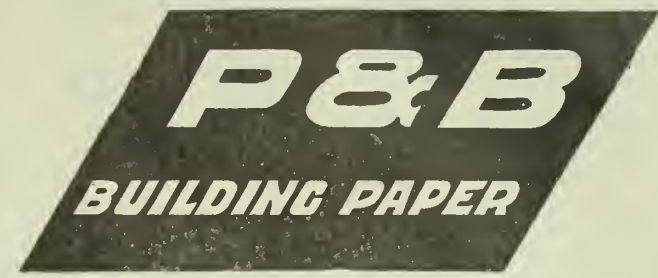
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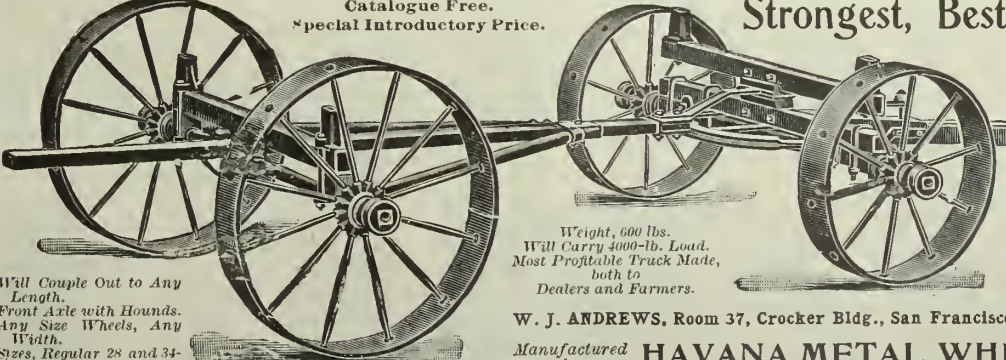
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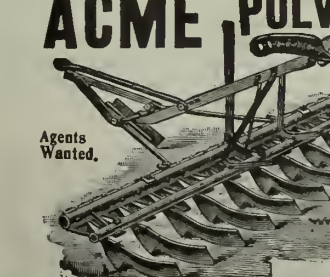
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Jan. 3, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	Dec.	May.
Wednesday.....	66 @—	69 1/2 @69 3/4
Thursday.....	65 1/2 @—	69 1/2 @69 3/4
Friday.....	66 @65 1/2	69 1/2 @69 3/4
Saturday.....	67 1/2 @65 1/2	69 1/2 @69 3/4
Monday.....	— @—	— @—
Tuesday.....	— @—	69 1/2 @70 1/4

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday.....	5s 11 3/4d	5s 11 3/4d
Thursday.....	5s 10 3/4d	5s 10 3/4d
Friday.....	5s 11 3/4d	5s 10 3/4d
Saturday.....	5s 11 d	5s 10 3/4d
Monday.....	*—s—d	—s—d
Tuesday.....	5s 11 3/4d	5s 11 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec., 1900.
Thursday.....	1 05 1/4 @1 04 3/4	1 09 1/2 @—
Friday.....	1 05 1/2 @1 05 1/4	— @—
Saturday.....	— @—	— @—
Monday.....	*— @—	— @—
Tuesday.....	1 05 1/2 @1 05 1/4	1 10 1/2 @1 09 3/4
Wednesday.....	1 05 1/2 @1 05 1/4	1 10 @1 09 3/4

WHEAT.

While there is a little hotter tone to the wheat market than a week ago, quotable rates have not been materially changed. Trading has been so light during most of the week that there has been little or no opportunity to thoroughly test values. Decreased stocks in England and increased famine in India are set forth as the bullish factors for the time being. Recent reports from Australia write discouragingly of the bad effects of drouth the past winter in that part of the globe. In the speculative markets Chicago shows an advance of about 1c per bushel for the week, Liverpool is about 1c per cental firmer, while San Francisco is fractionally higher for May and Dec.

The shipments of wheat and its equivalent in flour were as follows for six months ended January 1:

	1899, cts.	1898, cts.	1897, cts.
Wheat.....	2,381,748	989,201	6,821,392
Flour.....	2,190,825	1,218,638	1,260,678

Totals.....4,572,573 2,208,839 8,682,070

During the first six months of the current cereal year 54 cargoes of wheat and flour were shipped from San Francisco, aggregating 163,360 tons. Available stocks for export remaining in State on Jan. 1st are estimated at 595,753 tons. Receipts from Oregon and other outside sources from July 1st to Jan 1st were 110,748 centals wheat, 178,812 barrels flour—total in wheat and flour, 647,184 centals. Amount reported on hand July 1st was 2,424,348 centals. Deducting the old wheat carried over, also the imports from July to Jan., and allowing 7,000,000 centals for home consumption in twelve months, with the remaining surplus estimated as above, give 19,000,000 centals for the California crop of 1899, or an exportable surplus from said crop of 12,000,000 centals.

	Centals.
On hand July 1st.....	2,424,348
Surplus of crop 1899—estimated.....	12,000,000
Rec'd from outside State—wheat.....	110,748
Rec'd from outside State—flour.....	647,184
	15,182,280
Exports for six months.....	3,267,216

Balance.....11,915,064

Or 595,753 short tons. There were ships here on the 1st sufficient to carry 45,000 tons, and the vessels on the way to this port represented a carrying capacity of 300,000 tons. This is about 80 ships less than required to move the surplus above shown. The exportable surplus will be increased to the extent of arrivals from points outside State during balance of the season.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, \$1.04 1/2 @1.05 1/2.
December, 1900, delivery, \$1.09 3/4 @1.10 1/4.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at \$1.05 1/2 @1.05 3/4; December, 1900, \$1.10 @1.09 3/4.

California Milling.....	\$ 97 1/2 @1 05
Cal. No. 1 shipping, alongside.....	95 @ 97 1/2
Oregon Valley.....	92 1/2 @1 00
Walla Walla Blue Stem.....	90 @ 1 02 1/2
Walla Walla Club.....	80 @ 1 00
Off qualities wheat.....	75 @ 90

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on Dec. 1st and Jan. 1st:

Tons—	Dec. 1st.	Jan. 1st.
Wheat.....	236,004	*219,989
Barley.....	85,994	†68,497
Oats.....	5,672	6,155
Corn.....	35	491

*Including 147,721 tons at Port Costa, 70,648 tons at Stockton.

†Including 29,114 tons at Port Costa, 23,403 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 16,015 tons for the month of December. A year ago there were 103,830 tons wheat in Call Board warehouses.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	—s—d @—s—d	6s 2 1/2 d @—s—d
Freight rates.....	23 1/2 @25s	35 1/2 @36 1/2 s
Local market.....	\$ 11 1/2 @1 16 1/4	\$0 95 @1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

There is no change for the better to record in the flour market, and none likely to be experienced in the near future. Trade is slow, both on foreign and local account. Values are without quotable change, but it is the exception where transfers of noteworthy magnitude are effected at full current rates or anything near thereto.

Superfine, lower grades.....	\$2 40 @2 60
Superfine, good to choice.....	2 65 @2 90
Country grades, extras.....	3 00 @3 25
Choice and extra choice.....	3 35 @3 60
Fancy brands, jobbing.....	3 60 @3 75
Oregon, Bakers' extra.....	3 00 @3 40
Walla Walla, Bakers' extra.....	3 00 @3 40

BARLEY.

Market has been exceedingly quiet most of the time since last review, with absence of firmness fully as prominent a feature as previously noted. Neither shippers nor buyers on local account care to operate freely, and when they did inspect offerings, it was the exception when they could be induced to pay full current quotations. The speculative market showed much the same inactive condition as the market for actual and immediate deliveries. Fluctuations in Call Board prices were of small dimensions.

Feed, No. 1 to choice.....	75 @ 80
Feed, fair to good.....	55 @ 70
Brewing, No. 1 to choice.....	87 1/2 @ 97 1/2
Chevalier, No. 1 to choice.....	1 00 @1 07 1/2
Chevalier, No. 2.....	— @—

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

Seller, 1900, new, — @—.
May, 1900, delivery, 72 @—c.
December, 1900, delivery, — @—c.
Wednesday, at regular noon session of the Call Board, May, 1900, feed sold at 72c.

OATS.

The market is tolerably well stocked with common to medium grades, and the tendency of prices on these descriptions in favor of the buying interest, although quotable rates are without appreciable reduction. Choice to select milling and feed oats are not plentiful, and are commanding relatively firmer figures than the lower grades. In seed oats there is little doing, demand on this account having been about satisfied for the season.

White Oats, fancy feed.....	1 25 @—
White, good to choice.....	1 15 @1 22 1/2
White, poor to fair.....	1 07 1/2 @1 12 1/2
Gray, common to choice.....	1 10 @1 20
Milling.....	1 15 @1 25
Surprise, good to choice.....	1 20 @1 30
Black Russian.....	90 @1 02 1/2
Red.....	95 @1 20

CORN.

Stocks of this cereal are far from heavy at present in this center, but market is a little better supplied than it has been for some weeks past. While the market does not show any special strength for large corn, either White or Yellow, the impression is pretty generally entertained that values will not go materially lower for some time, if at all this season. Small Yellow is in such light supply as to be hardly quotable.

Large White, good to choice.....	1 05 @1 10
Large Yellow.....	1 05 @1 10
Small Yellow.....	1 40 @1 50
Eastern Mixed.....	1 02 1/2 @1 07 1/2

RYE.

The little business doing is within range of former quotations, the market showing steadiness.

Good to choice, new.....	1 02 1/2 @1 07 1/2
--------------------------	--------------------

BUCKWHEAT.

Market is so inactive that only nominal quotations are possible. There is scarcely

any offering and very little in the hands of local millers.

Good to choice.....	2 00 @2 10
Silverskin.....	— @—

BEANS.

The customary midwinter holiday dullness is still ruling in the bean market, and it would not be surprising to have practically same conditions continue to exist for several weeks yet. In the meantime it is not likely that values for desirable qualities of any variety will change materially. There is no occasion for holders of choice to select beans being uneasy. All supplies of above description are likely to be needed before the season ends. Only on seriously damaged beans is the market weak, with prices so irregular and unsettled as to be unquotable.

Pea, fair to good, 100 lbs.....	2 75 @3 00
Small White, good to choice.....	2 75 @2 90
Lady Washington.....	2 25 @2 40
Butter, small.....	3 75 @4 00
Butter, large.....	— @—
Pinks.....	2 50 @2 75
Bayos, good to choice.....	3 25 @3 50
Reds.....	3 75 @4 00
Red Kidneys.....	3 00 @3 50
Limas, good to choice.....	4 85 @5 00
Black-eye Beans.....	4 50 @4 75
Horse Beans.....	— @—
Garbanzos, large.....	2 50 @2 75
Garbanzos, small.....	2 00 @2 25

Mail advices of late date from New York City give the following resume of the bean trade, prices quoted being per 60-lb bushel:

"Trade has been exceedingly quiet again this week, but domestic stock has come forward very slowly and the market has undergone no change of moment. A lot of 500 hags of foreign Marrow arrived early in the week and these were soon sold to West Indian exporters, the price in bond being less than domestic goods could be bought at. This has seriously interfered with the shipping of State beans. Home wants are still quite small and will continue so until after the opening of the new year. Holders are generally unwilling to accept less than \$2.20 for choice old or \$2.15 for best new. Medium in light supply, and while the jobbing business is at \$2 it would be difficult to buy many at that. Pea ruling quiet at \$2 for barrels, and a few bags have also brought that price; carlots have been offering 2 1/2 @c less. The advices from the interior are of such a character as to make a generally confident holding of these goods. The steamer Styria arrived from Piume with 7800 bags beans, mostly Pea and Medium; only a few have been sold as yet, and it looks as if much of the stock would go into store. Exporters took close to 400 bbls. Red Kidney, but trade had been so dull previously that holders were rather anxious sellers and the orders were filled mainly at \$2.27 1/2; some choice lots can now be bought on the market at \$2.25. White Kidney ruling firm because of light stocks. Yellow Eye strong and some lots held higher than we quote. Not much interest in Turtle Soup. California Lima remain very quiet and no more than steady at \$3.30 @3.35. Dutch Giants are affecting the trade in domestic stock; Green and Scotch peas slow."

DRIED PEAS.

No changes have developed in the market for Dried Peas since last review. Both kinds quoted are in light stock, with choice in good request at prevailing rates, especially Niles peas.

Green Peas, California.....	2 10 @2 25
Niles Peas.....	2 10 @2 25

WOOL.

There is not much trading at present, never is at this time of year, but considerable wool of previous purchases is moving Eastward, mainly over Canadian Pacific. Market continues firm in tone. A careful and thorough canvass of stocks in this center on the 1st inst. made the following showing:

GREASE WOOL ON HAND JAN. 1.

	Lbs.
California Spring.....	375,000
California Fall.....	3,200,000
Oregon.....	1,650,000
Territory.....	360,000
Pulled.....	550,000

Total grease wool.....6,135,000
Scoured wool.....530,000

Total scoured and in grease, 6,665,000

Stocks remaining in interior are estimated at 200,000 lbs. Spring and 800,000 lbs. Fall: total interior, 1,000,000 lbs. Total in State, calculating scoured on a grease basis, 9,125,000 lbs.

SPRING.

Oregon Eastern, choice.....	13 @16
Oregon Eastern, fair to good.....	11 @13
Oregon Valley.....	17 @20

FALL.

Humboldt and Mendocino.....	16 @17 1/2
Middle Counties, defective.....	9 @12
Northern, free.....	11 @14
Northern, defective.....	9 @11
Southern Mountain.....	9 @11

San Joaquin Plains.....	— @—
San Joaquin Lamb.....	— @—

HOPS.

Offerings are mainly fair to medium grades, and for these descriptions there is virtually no demand, although values are decidedly low and at levels affording no profit to the producer. The only inquiry which exists is for a choice to fancy hop, these being in rather light supply, both in this country and in Europe. But despite the fact of there being no supplies of fancy grades, they fail to command as much as would be reasonably expected for medium qualities on a healthy market.

Good to choice, 1800 crop.....6 @9

The following information concerning hops comes through by recent mail from a New York authority:

"Advices from the interior of this State have indicated a fair amount of business, and the apparently lower range of values has been due to the fact that few really choice lots remain in growers' hands. Some of the lower grades have been selling at a little more money than was obtainable a week or two ago. Quite a quantity of stock has also changed hands on the Pacific coast. The bulk of the best hops in all parts of the country have been picked up, and this is likely to work somewhat against the export trade, as the preponderance of stock on the other side of the water is of the medium and low grades and England wants more fine goods. The exports the past week are the heaviest of the season, and they include some consignments from the Pacific coast. There has been a little more trading between local dealers, and brewers have shown considerable interest. Recent transactions have necessitated some revision of quotations, and our figures now represent as nearly as may be the trading basis. There is a wide range in qualities, hence an unusually wide range in values. The weakness in values that has been noted the past few weeks has not been so much in choice grades as in the common, medium and prime qualities."

HAY AND STRAW.

Dullness has been the leading feature of the hay market the past week, rainy weather and holiday observances interfering with business much of the time. It is doubtful if there would have been much more business done with fair weather all the week and an absence of holidays. Buyers are proceeding as slowly and cautiously as if there was a superabundance of hay for all time to come. Prices remain quotably as last quoted. Straw is not in heavy receipt, but there is more than enough arriving for the immediate limited demand.

Wheat.....	7 00 @9 50
Wheat and Oat.....	7 00 @9 00
Oat.....	6 50 @8 50
Barley.....	6 00 @7 00
Alfalfa.....	5 0 @7 00
Timothy.....	— @—
Compressed.....	7 00 @9 50
Straw, 3/4 bale.....	30 @45

MILLSTUFFS.

Market for all kinds of mill feed is fully as favorable to the buying and consuming interest as previously quoted, with prospects better for prices receding than advancing in the near future.

Bran, 7/8 ton.....	11 50 @12 50
Middlings.....	15 00 @18 00
Shorts, Oregon.....	11 50 @14 00
Barley, Rolled.....	14 50 @15 50
Cornmeal.....	23 50 @24 00
Cracked Corn.....	24 50 @25 00

SEEDS.

There is little or nothing of interest to note in this department, and not likely to be any special change in this respect until the opening of the coming season. Values must be regarded as largely nominal in the absence of any special inquiry or any supplies of noteworthy magnitude.

	Per cth.
Mustard, Trieste.....	3 25 @3 50
Mustard, Yellow.....	4 50 @4 75
Flax.....	2 00 @2 25
	Per lb.
Canary.....	3 1/4 @4
Rape.....	2 @3
Hemp.....	4 @4 1/2
Timothy.....	4 @4 1/2
Alfalfa, Utah.....	7 @9

BAGS AND BAGGING.

Trading is of a slow order in all kinds of Bags and Bagging, as is almost invariably the case at the case at the beginning of the year. The market throughout shows a healthy tone, however, and indications are that there will be considerable business done in this line the coming Spring and Summer.

Calcutta Grain Bags, buyer June-July.....	6 1/4 @—
Calcutta Grain Bags, spot.....	6 1/4 @—
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @—
State Prison Bags, 100.....	— @—
Wool Sacks, 4 lbs.....	— @32 1/2
Wool Sacks, 3 1/2 lbs.....	— @28 1/2
Fleece Twine.....	7 1/4 @—
Gunnies.....	— @12 1/2
Bean Bags.....	4 1/2 @5 1/4
Fruit Sacks, cotton.....	6 1/4 @7 1/4

HIDES, PELTS AND TALLOW.

The Hide market has shown slight tendency downward in values, more the result of the rather poor quality of the Hides now coming forward than lack of inquiry or any increase in the volume of supplies. Pelts are selling at much the same prices as last quoted, recent arrivals averaging of fair volume. Tallow is in moderate request at quotably unchanged rates.

HONEY.

Market is very lightly stocked with Extracted of desirable grade, and is firm at the quotations, with no likelihood of supplies increasing during the balance of the season. Comb honey is in fair supply, considering it has to depend mainly on local custom, but values for same remain steady.

Extracted, White Liquid.....	7 1/2 @ 8
Extracted, Light Amber.....	7 @ 7 1/2
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	11 1/2 @ 12 1/2
Amber Comb.....	8 @ 10

BEESWAX.

Prices remain quotably unchanged. More than is offering could be readily placed at full current values.

Good to choice, light, 7 lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Market for Beef showed less activity and was slightly easier than for a week or two preceding. Veal and Lamb did not arrive freely and prices for them remained at a rather high range. The Mutton market was barely steady at last quoted values, with demand by no means brisk. Hogs of small to medium size continued to meet with prompt demand at ruling rates. Large Hogs were not specially sought after.

Beef, first quality, dressed, net 7 lb.....	7 @ 7 1/2
Beef, second quality.....	6 1/2 @ 6 3/4
Beef, third quality.....	6 @ 6 1/2
Mutton—ewes, 6 1/2 @ 7c; wethers.....	7 @ 7 1/2
Hogs, hard grain fed, medium.....	5 1/2 @ 5 3/4
Hogs, small, fat.....	5 1/2 @ 5 3/4
Hogs, large, hard.....	5 @ 5 1/4
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ 5 1/2
Hogs, country dressed.....	5 1/2 @ 6
Veal, small, 7 lb.....	8 @ 10
Veal, large, 7 lb.....	8 @ 9
Lamb, spring, 7 lb.....	8 1/2 @ 9

POULTRY.

During a great part of the week there has been a good market for most kinds of poultry, with no excessive stocks of good to choice fowls of any description except Turkeys, and the excess of those was not great, although values ruled a little too high in the early part of the week for retailers and consumers to take hold freely. Young Chickens in first-class condition, more particularly Fryers and Broilers, brought relatively the best figures. Market for Young Chickens closed strong.

Turkeys, dressed, 7 lb.....	15 @ 17
Turkeys, live hens, 7 lb.....	14 @ 15
Turkeys, live gobblers, 7 lb.....	14 @ 15
Hens, California, 7 dozen.....	4 00 @ 5 00
Roosters, old.....	4 00 @ 4 50
Roosters, young (full-grown).....	5 00 @ 5 50
Fryers.....	5 00 @ 5 50
Broilers, large.....	4 50 @ 5 00
Broilers, small.....	3 50 @ 4 00
Ducks, 7 dozen.....	4 50 @ 5 50
Geese, 7 pair.....	1 75 @ 2 00
Goslings, 7 pair.....	1 75 @ 2 00
Pigeons, old, 7 dozen.....	1 00 @ —
Pigeons, young.....	2 50 @ 3 00

BUTTER.

The market is both firm and weak, firm for the product of Northern creameries, i. e., Humboldt and Del Norte, especially the most favorite marks, owing to the output from that quarter being on the decrease, while retailers and consumers are slow to change to other brands. In the dairy section in the immediate vicinity of San Francisco bay the production is on the increase, and trouble is experienced in securing prompt sale for all this butter. These irregularities are, however, a yearly occurrence and will soon be smoothed out.

Creamery, extras, 7 lb.....	25 @ —
Creamery, firsts.....	23 @ 24
Creamery, seconds.....	22 @ 23
Dairy, select.....	22 1/2 @ 23 1/2
Dairy, seconds.....	18 @ 21
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 16
Creamery in tubs.....	18 @ 21
Pickled Roll.....	— @ —
Firkin, California, choice to select.....	19 @ 22
Firkin, common to fair.....	16 @ 18

CHEESE.

The market for this commodity remains in healthy shape, particularly for choice to select now, which is in limited stock and is certain to so continue for some weeks to come. There is a fair supply of seasoned cheese, four to eight months old, but it is not being crowded to sale, nor are values for the same any more favorable to buyers than lately quoted.

California, fancy flat, new.....	12 @ —
California, good to choice.....	10 1/2 @ 11 1/2
California, fair to good.....	10 @ 11

California Cheddar.....	— @ —
California, "Young Americas".....	10 1/2 @ 12 1/2

EGGS.

Although the demand was less active than for a fortnight or more preceding, which is invariably the case just after New Year's, there was no special accumulation of stocks of fresh, and values were maintained at a higher range than many expected or thought possible. While the market is not firm and demand is limited, no very serious breaks in values are likely to be experienced on fresh stock for several weeks to come. Cold storage eggs are still in fairly liberal supply, but are mostly of quality, and for such the market is very weak.

California, select, large, white and fresh.....	35 @ 37 1/2
California, select, irregular color & size.....	32 1/2 @ 35
California, good to choice store.....	30 @ 32 1/2
Eastern, as to section and grading.....	— @ —
Eastern, cold storage.....	17 @ 20

VEGETABLES.

Values for most kinds now arriving have kept tolerably close to figures current at date of last review, although changes effected in prices are mainly to lower figures. Aside from the early vegetables coming from Los Angeles section, the display is not extensive or varied. Fair average prices are still being in the main realized for stock from the southern part of the State. Onion market showed steadiness for good to choice grades, with no heavy spot supplies of this sort.

Beans, String, 7 lb.....	2 1/2 @ 4
Cabbage, choice garden, 7 lb.....	50 @ —
Cauliflower, 7 dozen.....	50 @ —
Egg Plant, 7 lb.....	10 @ 15
Garlic, 7 lb.....	5 @ 6
Onions, Yellow, Cal., good to choice.....	90 @ 1 25
Onions, Oregon, 7 cental.....	1 00 @ 1 30
Peas, Sweet, garden, 7 lb.....	2 1/2 @ 3 1/2
Peppers, Green Chile, 7 lb.....	2 @ 4
Peppers, Bell, 7 large box.....	— @ —
Rhubarb, 7 box.....	75 @ 1 00
Squash, Marrowfat, 7 ton.....	— @ —
Squash, Summer, 7 box.....	75 @ 1 00
Tomatoes, Los Angeles, 7 crate.....	75 @ 1 00
Tomatoes, Bay, 7 box.....	— @ —

POTATOES.

No changes of special note have been developed the current week in the potato market. Demand is lacking for choice to select Burbanks at full current rates, supplies of this description being of very moderate volume. Inferior qualities meet with slow sale at low and irregular prices. Sweeters were in rather light request and market was not particularly firm at quotations.

Burbanks, River, 7 cental.....	70 @ 95
Burbanks, Bay counties, 7 cts.....	— @ —
Burbanks, Humboldt.....	70 @ 1 10
Burbanks, Oregon.....	65 @ 1 10
River Reds.....	— @ —
Burbanks, Salinas, 7 cental.....	— @ —
Early Rose.....	85 @ 95
Garnet Chile.....	90 @ 1 15
Sweet River, 7 cental.....	— @ —
Sweet Merced.....	1 35 @ 1 50

The Fruit Market.

FRESH FRUITS.

In the line of fresh deciduous fruits, there has been little trading the past week. The weather most of the time was unfavorable, and offerings presented very little variety. Apples were the only tree fruit, other than citrus, quotable in a regular way. Persimmons are still to be seen, but only in a very limited quantity, and demand for them is of fully as slim proportions as the supply. Where sales were effected, low prices had to be accepted, 50c per two-layer box being about the utmost obtainable from retailers or shippers. The Apple market is not burdened with choice to fancy of Red varieties, and such command the best prices, some select selling up to \$1.50 per four-tier box, but this figure is hardly obtainable wholesale, at least not with sufficient frequency as to warrant naming it as a regular quotation. Pippins and nearly all light-colored Apples other than fancy Greenings went in the main at comparatively easy figures, the supply of this description being sufficiently ahead of immediate requirements to give buyers the advantage. Grapes are not wholly off the market, but the quantity offering is small, and they are receiving very little attention. The few sales affected are mainly at 50¢ to 75¢ per box or crate. Cranberries are moving slowly and market is weak at \$6.00 per barrel for Eastern and \$1.50 @ 1.75 per bushel box for Oregon.

Apples, fancy, 4-tier box.....	1 00 @ 1 25
Apples, good to choice, 50-lb. box.....	75 @ 90
Apples, common to fair, 50-lb. box.....	35 @ 80
Persimmons, 2-layer box.....	40 @ 65

DRIED FRUITS.

While the market for cured and evaporated fruits is very quiet, a condition perfectly natural at this date, it is not wholly lifeless. Jobbing transactions are fully up to if not above the average for the time of year. Values are ruling decidedly steady, there being no change to record in

quotations. There is a fairly healthy tone to the market for most kinds, and good prospects that the bulk of present supplies will be required for the spring trade. There is little probability that there will be any necessity for carrying stocks up to the end of the season of other than large Prunes and, may be, moderate quantities of Figs and Evaporated Apples. These latter kinds may clean up much better and more speedily than present conditions warrant in anticipating. In fact, if holders insist on unloading, and, with that end in view, make special concessions to buyers, they are very apt to be accommodated with custom for all offerings at an early day. There is still very fair inquiry for small to medium size Prunes, mainly from Germany. Bargains in Peaches do not lack for buyers, but stocks are held in the main above the views of bargain hunters. In addition to a moderate movement of dried fruit Eastward by rail for Europe, small quantities have gone afloat on sailing vessels for various points.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, 7 lb.....	10 1/2 @ 12
Apricots, Royal, fancy.....	12 1/2 @ 13
Apricots, Moorpark.....	13 @ 15
Apples, in 50-lb boxes, rings, pressed, fancy.....	7 1/2 @ —
Apples, 50-lb boxes, rings, pressed, good to choice.....	6 @ 7
Figs, White, fancy pressed.....	6 1/2 @ 7 1/2
Peaches, unpeeled, good to choice.....	6 @ 7
Peaches, unpeeled, fancy.....	7 @ 7 1/2
Peaches, peeled, in boxes.....	12 @ 15
Pears, unpeeled Bartlett's, halved, fancy.....	9 @ 10
Pears, halved, unpeeled Bartlett's.....	6 1/2 @ 8
Pears, quartered, unpeeled Bartlett's.....	6 1/2 @ 7 1/2
Plums, Black, pitted.....	6 1/2 @ 7 1/2
Plums, White and Red, pitted.....	7 @ 8
Prunes, in sacks, 40-50's.....	4 @ 4 1/2
50-60's.....	3 1/2 @ 3 3/4
60-70's.....	3 1/2 @ —
70-80's.....	3 1/4 @ —
80-90's.....	3 @ —
90-100's.....	2 1/2 @ —
110-130's.....	2 @ —
Prunes in boxes, 1/2c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.	
4 sizes Santa Claras and equal.....	2 1/2 @ —
4 sizes San Joaquin and Northern.....	2 1/4 @ 2 1/2
Prunes, Silver.....	4 @ 7

COMMON SUN-DRIED.

Apples, sliced.....	4 @ 5
Apples, quartered.....	4 @ 5
Figs, Black.....	3 @ 4
Figs, White.....	— @ —
Peaches, unpeeled.....	— @ —

Advices by mail of late date from New York City furnish the following review of the dried fruit market:

"Evaporated apples have had a good export demand, and with country advices firm, market has ruled strong at 7c for strictly prime. Choice have had a moderate jobbing demand and also fancy and outside quotations rather extreme. Sun-dried sliced have ruled dull, average southern not exceeding 5¢ @ 5 1/2¢. Quarters have been wanted for export and tone is firm, though southern rarely show quality to exceed 5¢ @ 5 1/2¢. Chops dull and lower. Cores and skins quiet at 1 1/4¢ @ 1 1/2¢ for bags with barrels generally \$1.25 @ 1.30 per 100 pounds. Small fruits in few hands and held high, but outlet limited and values largely nominal, especially on huckleberries, which are very scarce. California fruit has had a good jobbing movement at steady prices."

Apricots, Cal., Moorpark, 1999, 7 lb.....	15 @ 17 1/2
Apricots, Cal., Royal, 1899, 7 lb.....	13 @ 14
Peaches, Cal., 1899, peeled, 7 lb.....	18 @ 22
Peaches, Cal., 1899, unpeeled, in bxs, 7 lb.....	8 @ 9
Peaches, Cal., 1899, unpeeled, in bags, 7 lb.....	7 1/2 @ 8 1/2
Prunes, Cal., 1899, 7 lb.....	3 1/2 @ 7

RAISINS.

The price list of the Growers' Association continues in force without change. There are some kinds, however, which are virtually out of stock, notably Sultanias and standard four and two crown loose Muscatels. Seedless Muscatels are bringing in the hands of jobbers slightly higher rates than are quoted. Present offerings are largely Orientals, or second grade raisins, with a fair movement in them at current rates.

F. O. B. FRESNO DELIVERY.

London Layers, 6-crown, 7 box.....	\$3 00 @ —
Do do 5-crown, 7 box.....	2 50 @ —
Do do 4-crown, 7 box.....	2 00 @ —
Do do 3-crown, 7 box.....	1 60 @ —
Do do 2-crown, 7 box.....	1 50 @ —
Valencia layers, 7 20-lb box.....	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6 1/4 @ —
Loose Muscatel, seedless.....	5 @ —
Pacifics.—2-crown loose Muscatel, 5 1/4c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c.	
Orientals.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/4c; 4-crown, 6c.	

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, 7 lb, 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.	
Sultanias.—Bleached fancy, 7 lb, 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.	
Loose Sultanias.—Fancy, 7 lb, 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.	
Valencia Clusters.—Fancy, 7 lb, 7c; choice, 6c; standard, 5c.	

CITRUS FRUITS.

The Orange market has been lacking in activity and firmness much of the time

R. Hall's Pulmonary Balsam,

For COUGHS and COLDS.

J. R. GATES & CO., Druggists,
417 Sansome St., San Francisco.

MOORE, FERGUSON & CO.

WOOL, GRAIN, FLOUR

—AND—

General Commission Merchants,

310 CALIFORNIA ST., S. F.

Members of the San Francisco Produce Exchange.

Personal attention given to sales and liberal advances made on consignments at low rates of interest.

WE MAKE TO ORDER

Buggy Tops, Cushions,
Carriage Tops, Lazy Backs,
Canopy Tops, Storm Aprons,
Wagon Tops, Dust Hoods,
Dashes, Fenders.
Old Tops, Dashes and Fenders re-covered if sent to us. We sell Trimming Material of all kinds, also Top Dressing, Chamols Skins, Sponges, etc. Write for Prices and How to Measure. CALIFORNIA TOP CO., 222 Mission Street, San Francisco, Cal.

under review. With cool and rainy weather a great portion of the week, the demand was naturally slow. While occasional sales of extra choice fruit were made at higher figures than quoted, the market for the general run of offerings was weak. Lemons moved slowly and were offered at fully as low rates as were current at any previous date this season. Limes were in sufficient stock to keep the market more favorable to the buying than to the selling interest.

Oranges—Navels, 7 box.....	1 00 @ 2 00
California Seedlings.....	75 @ 1 00
California Tangerine, 7 box.....	75 @ 1 25
Grape Fruit, 7 box.....	1 25 @ 2 50
Lemons—California, select, 7 box.....	3 00 @ —
California, good to choice.....	2 00 @ 2 50
California, common to fair.....	75 @ 1 50
Limes—Mexican, 7 box.....	4 00 @ 4 50
California, small box.....	75 @ 1 25

NUTS.

There is little inquiry at present from any quarter for either Almonds or Walnuts. Market is weak, with values poorly defined. Former quotations remain in force, but are largely nominal. Peanuts do not make much of a showing, either domestic or imported, and market is firm at current figures.

California Almonds, shelled.....	17 @ 20
California Almonds, paper shell, 7 lb.....	11 @ 12
California Almonds, soft shell.....	10 @ 11
California Almonds, hard shell.....	6 @ 7
Walnuts White, soft shell.....	10 @ 11
Walnuts White, Cal., standard.....	9 @ 10
Chestnuts, Cal. Italian.....	9 @ 10
Peanuts, Cal., fair to prime.....	4 @ 5
Peanuts, Eastern hand-picked.....	6 @ 6 1/2
Pine Nuts.....	5 @ 6 1/2

WINE.

The market remains in all respects the same as last noted, being exceedingly quiet, with no business to record in new wines, and none of consequence likely to be transacted the current month. Quotable values on dry wines from one to three years old continue as before noted, 15¢ @ 20¢ per gallon, San Francisco delivery, as to quantity, quality and other conditions. Since last review a Panama steamer cleared with 31,771 gallons and 40 cases wine, including 29,427 gallons for New York.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same Time Last Year.
Flour, 4-sks.....	119,596	2,809,712
Wheat, cts.....	26,786	2,341,698
Barley, cts.....	79,897	3,768,156
Oats, cts.....	24,347	535,585
Corn, cts.....	5,084	79,979
Rye, cts.....	933	82,480
Beans, sks.....	1,395	283,220
Potatoes, sks.....	27,921	676,940
Onions, sks.....	2,886	117,563
Hay, tons.....	2,286	94,813
Wool, bales.....	39	35,159
Hops, bales.....	51	7,412

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same Time Last Year.
Flour, 4-sks.....	70,768	1,754,243
Wheat, cts.....	11,810	1,949,914
Barley, cts.....	6,590	2,982,213
Oats, cts.....	30	23,024
Corn, cts.....	145	8,950
Beans, sks.....	702	14,879
Hay, bales.....	4,051	57,466
Wool, bs.....	261,875	3,461,835
Hops, bs.....	47,463	650,509
Honey, cases.....	20	3,236
Potatoes, pkgs.....	5,058	45,380

California Dried Fruit at New York.

NEW YORK, Jan. 3.—California dried fruits quiet but fairly steady. Evaporated apples, common, 6¢ @ 6 1/2c; prime wire tray, 6 1/2¢ @ 7c; choice, 7 1/4¢ @ 8 1/4c; fancy, 8 1/4¢ @ 9c. Prunes, 3 1/4¢ @ 6c. Apricots, Royal, 13¢ @ 15c; Moorpark, 15¢ @ 18c. Peaches, unpeeled, 7 1/4¢ @ 10c; peeled, 20¢ @ 22c.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING DEC. 19, 1899.
639,341.—VIOLIN KEY—C. J. Beauvais,
Phoenix, Ariz.
639,350.—LABEL HOLDER—E. L. Brown,
S. F.
639,525.—PRUNING SHEARS—A. W. Con-
atser, Los Angeles, Cal.
639,534.—VESSEL COVER FASTENER—
R. W. Crocker, Seattle, Wash.
639,550.—HEATER—J. R. Froberg, Grass
Valley, Cal.
639,370.—BOOK HOLDER—T. J. Gary,
Oregon City, Or.
639,377.—CUTTING TOOL—G. M. Grant,
Valley Springs, Cal.
639,380.—STEP LADDER—J. D. Hall, Bes-
tonia, Cal.
639,388.—MITER BOARD—P. A. Holm-
berg, Los Angeles, Cal.
639,390.—BOILER—B. Holt, Stockton,
Cal.
639,393.—DISPENSING CAN—C. M. Hus-
ted, Prescott, Ariz.
639,257.—OIL BURNER—H. Luckenbach,
Snohomish, Or.
639,418.—ORE PULVERIZER—H. Mann,
Piute, Cal.
639,419.—SASH FASTENER—G. W. Man-
uel, Oakland, Cal.
639,420.—LEDGER—E. Marsky, San Jose,
Cal.
639,260.—BANDAGE—G. A. Mattern, Berk-
eley, Cal.
639,690.—ELECTRIC CANE—W. N. Sher-
man, Merced, Cal.
639,302.—OIL BURNER—J. F. Shultz, San
Jacinto, Cal.
639,310.—ANIMAL TRAP—J. B. Stout,
Stewart's Point, Cal.
639,463.—CORSET STAY—Mary E. Thomp-
son, S. F.
639,471.—FAUCET FILTER—G. W. Van
Alstine, Los Angeles, Cal.
639,474.—STEAMER AND BOILER—R. W.
Velty, S. F.
639,475.—WASHER AND CLEANER—
Whalen & Warner, Portland, Or.
639,375.—FRUIT WRAPPING MACHINE—
J. C. Wilson, Los Angeles, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

DISPENSING CAN FOR LIQUIDS.—C. M. Husted, Prescott, Ariz. No. 639,393. Dated Dec. 19, 1899. This invention relates to a dispensing can for oil, gasoline or other liquids. The can has a screw cap for the introduction of the liquid; a pouring spout extending from the bottom upwardly outside the can, with an inwardly turned end above the level of the top of the can. A horizontally fixed cylindrical spout extends partly across the top of the can, and beyond the intumed end of the upwardly projecting spout, which intumed end is enclosed within a horizontal spout. A spring-pressed valve or stopper closes against the intumed end of this spout, and a lever or suitable connecting mechanism serves to withdraw it when it is desired to pour liquid, then by tilting the can the liquid flows up the spout from the bottom and through the intumed end, thence passing out through the horizontal spout. The filling opening preferably has a strainer extending down from it into the can to prevent the introduction of heavy or foreign substances.

DETACHABLE LEAF LEDGER.—E. Marsky, San Jose, Cal. No. 639,420. Dated Dec. 19, 1899. This invention relates to detachable or loose-leafed ledgers. It comprises metallic bars having toothed clamps or other fastenings coincident with slots, which are made in the inner edges of the loose leaves, and through which said clamps are adapted to pass. A slidable locking strip or wire is adapted to engage the sections, so as to secure the leaves in place. The sections are attached to flexible strips of bendable material, which strips are bent so as to form a book of any desired number of sections. Each leaf or leaves of the independent sections may be removed single or together, and others may be re-placed so that the book can be perpetually kept up by adding new leaves as soon as the old ones are removed and filed.

SASH FASTENER.—G. W. Manuel, Oakland, Cal. No. 639,419. Dated Dec. 19, 1899. This invention relates to a device for fastening windows so as to make them burglar-proof, and also to prevent their rattling. It consists of a spring-pressed

bolt slidable horizontally through the rail of one sash, and having lugs projecting radially from its outer end, a keeper fitted to the rail of the companion sash with an opening through it adapted to admit the lugs of the bolt, and having inclined or cam-shaped surfaces so that when the bolt is turned the lugs engage these surfaces and draw the sashes together, locking them firmly in place. The keeper has an upward extension inclined rearwardly, so that when the sashes are closed, the projecting end of the bolt striking this incline will be pushed inward sufficiently to allow the sashes to pass each other, after which when fully closed the bolt will be shot forward by its spring and will thus latch the window to prevent its being opened. The turning of the bolt afterwards insures such a locking as will hold the two firmly together.

BOILER.—Benjamin Holt, Stockton, Cal. No. 639,390. Dated Dec. 19, 1899. This invention is intended to provide improvements in portable boilers of that class having water legs extending down upon each side of the furnace and combustion chamber for the whole length of the boiler. As usually constructed the connection between these water legs and the shell of the boiler is such that the strain upon the boiler caused by the swelling motion of moving over rough grounds wrenches and disengages the fastening so that such boilers rapidly become leaky. In this invention the inner sheet of the water leg has its upper end curved into an arc or segment, this curved end extending a short distance inwardly below the boiler, and it is riveted to the shell of the boiler along the line of contact. This curvature forms a strong base for the boiler, and in addition provides a much more complete and open connection for the rapid circulation of water within the water legs.

RAILWAY ORE PULVERIZER.—H. Mann, Piute, Cal. No. 639,418. Dated Dec. 19, 1899. The object of this invention is to provide a means for crushing ore on a large scale and an economical application of power, so that low grade or other ores can be reduced in large quantities and with rapidity. It consists of a single circular trough of short segments abutting and forming tight joints at their meeting ends, said segments having upwardly divergent sides with flanges at the top. Upon these flanges rails are secured and a mortar or car of any description is adapted to travel upon these rails. This car is connected with its axes by loose links, heavy spiked and smooth rollers, one following the other, so that as the car travels around the circumference of the apparatus these rollers serve to pulverize the ore within the trough. Behind these rollers a heavy drag or drags are made to follow, being also connected with the car, and thus the ore is finally pulverized as finely as may be desired.



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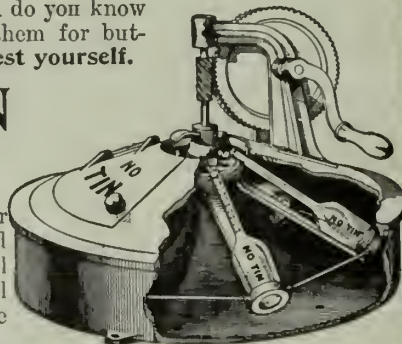
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Grange Elections.

TO THE EDITOR:—At the annual election of officers of American River Grange the following were chosen: Worthy Master, N. H. Lauridson; Overseer, W. H. Creswell; Lecturer, J. D. Cornell; Steward, S. M. Warnock; Assistant Steward, O. Phillips; Chaplain, Mrs. Lauridson; Treasurer, Mrs. Hanen; Secretary, Maisie Bryan; Gate Keeper, A. McDonnell; Ceres, Miss Annie Biggs; Pomona, Miss Ethel Robinson; Flora, Miss Carrie Hansen; Lady Assistant Steward, Miss Della Creswell; Organist, Miss Etta Cornell; Trustee, J. Cornell, Sr.

ETTA CORNELL, Secretary.
Mills, Cal., Dec. 28th, '99.

TWO ROCK GRANGE.—J. C. Purvine, Master; C. W. Hunt, Overseer; H. W. Davisson, Lecturer; James Carmody, Steward; T. King, Assistant Steward; Mrs. Barlow, Chaplain; Jno. Sales, Treasurer; Mrs. Ida King, Secretary; N. B. Nile, Gatekeeper; Mrs. E. C. Hinshaw, Pomona; Mrs. J. C. Purvine, Flora; Mrs. A. Linebaugh, Ceres; Mrs. Jas. Carmody, Lady Assistant Steward; Mrs. Sam Pharrises, Organist; G. W. Gaston, Trustee (three years).

PETALUMA GRANGE.—G. W. Park, Master; Miss M. Kelsey, Overseer; A. S. Hall, Lecturer; D. Alexander, Steward; Mrs. C. D. Grover, Chaplain; J. Caltoft, Treasurer; Mrs. E. A. Williams, Secretary; P. McCarthy, Assistant Steward; Henry Eastman, Gatekeeper; Mrs. M. Penry, Pomona; Mrs. Chamberlain, Ceres; Mary Caltoft, Flora; Cassie McGlym, Lady Assistant Steward; Blanche McNally, Pianist.

NAPA GRANGE.—Walter Renwick, Master; A. W. Robinson, Overseer; D. J. Brown, Lecturer; Mrs. O. E. Borrette, Secretary; H. N. Fossett, Treasurer; H. R. Borrette, Steward; W. G. Thompson, Assistant Steward; O. E. Moore, Chaplain; Mrs. Walter Renwick, Gatekeeper; Mrs. A. W. Robinson, Pomona; Mrs. J. J. Swift, Flora; Mrs. John McCollum, Ceres; Miss Nellie Borrette, Lady Assistant Steward; Mrs. Ellen Kerns, Organist; A. D. Butler, Trustee (three years).

SANTA ROSA GRANGE.—M. B. Mae, Master; W. E. Woolsey, Overseer; Mrs. C. H. Butler, Lecturer; J. Piezzi, Steward; Sohn Strong, Treasurer; Miss Lida Coulter, Chaplain; Miss Fannie Gamble, Secretary; E. D. Sweetser, Gatekeeper; Mrs. Mary Ellis, Pomona; Mrs. Neva Rogers, Flora; Mrs. H. Gregory, Ceres; Mrs. Chauncey Pool, Lady Assistant Steward; Miss Carrie Butler, Organist; S. T. Coulter, trustee.

The A B C of Bee Culture.

We have received from the publishers, A. I. Root Co., a copy of the new edition of the above-named book. It has been rewritten and reillustrated, and presents bee practice up to the end of the century. As the name indicates, the book is written principally for beginners, and covers exhaustively every subject necessary for the successful management of bees, so that even the advanced beekeeper will find much that is new and useful. The entire work contains 475 pages and nearly as many engravings, a very large part of which belong to the modern half-tone class, showing nature and art as they really are.

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Address GEO. C. ROEDING, Fancher Creek Nursery, Fresno, Cal.

Santa Barbara Notes.

TO THE EDITOR:—The rain of the 18th gave us 1.65 inches, which will give new life to vegetation and make the land work more pliable. Plows and cultivators have taken a new start, so no rust will gather on them for several days at least.

We must have more rain to make us good crops of anything. We must have considerable to reach the foundations of springs and wells that have failed or are so low. The land is wet only on the surface yet. The rains so far have come just right, so there has been no loss, but all has gone where most needed.

Grass in favorable places is large enough, so the pasturage is very good for the time of year. Seeding for grain and hay is being rapidly done. Not much has been done yet in planting fruit trees: I think there will not be much done here this season planting new orchards.

Lima and seed beans I think will take the lead if the season proves favorable. We should at least try to grow corn and potatoes enough for home consumption, as too much money goes away from our county for these articles.

The two past seasons having been so dry, we have had a reasonable excuse for short crops. We will hope for better things the coming season.

There is quite a boom in oil at Summerland, which gives work to many that would otherwise be idle.

O. N. CADWELL.
Carpenteria, Cal., Dec. 18th, '99.

Accepts Our Advice.

TO THE EDITOR:—I read with great interest your article on sheep for the ranch in last week's RURAL PRESS. I should very much like to get about half a dozen old ewes in lamb of some good mutton breed, and should be very much obliged if you could give me the address of any breeder. I take this opportunity of telling you how much I like your paper. I assure you I have found that by utilizing hints in it that I have saved many times the price of its subscription. I think it is always pleasant to know that one's work is appreciated, and I assure you that you are doing good work and that your paper has to my own knowledge been of inestimable value to ranchers of my acquaintance. Wishing the RURAL PRESS all possible success in the coming year,
NORMAN J. STEWART.

Aromas, Monterey County.

[Some of our readers have these sheep probably, though there are not so many in the State as there should be. All these improved animals should be regularly advertised in our columns. The only way to popularize them is to keep them always before the reading public. We are thankful for our correspondent's good opinion.—ED.]

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A Babcock tester is a good thing—one of the best—but butter yield under average conditions is better. Try a **Sharples Hand Separator** that way and you win every time. The butter quality is better, too, and the machine is simple and durable, easily understood, easily washed, no repair bills, etc. A TRIAL FREE. Send for Catalogue No. 31.



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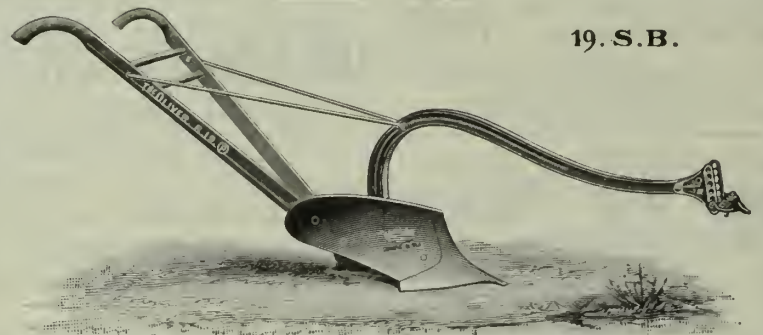
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A Simple Method for Thawing Dynamite.

The Oregon Agricultural College and Experiment Station has been doing some work recently in the blasting of soils with dynamite for the purpose of determining its effects upon the growth of fruit trees, and to ascertain if it can be practically employed as a substitute for subsoiling. In using this explosive they find that it freezes in a temperature of about 52 degrees Fahr., hence at this season of the year when kept in an ordinary building without artificial heat, it remains in a frozen condition. They were at first not a little concerned as to a safe method of thawing it for use, but acting upon a suggestion to bury it for a short while in fermenting horse manure, soon dispelled the specter of a premature explosion which occasionally occurs during the process of thawing. This method so far has been quite satisfactory. The plan is to bury the frozen dynamite in a pile of heated horse manure for an hour before the time to use it. They recommend this plan of thawing this explosive with the fullest confidence that its general adoption wherever practical will remove an element of danger in its use.

Up-to-Date Poultry Farming.

H. H. Stoddard, who has been known to the poultry public for the last quarter of a century, has just written a new book entitled "The New Egg Farm," which conveys the fullest available information about commercial poultry keeping. The author has conducted great poultry farms both East and West, and is familiar with conditions in all parts of the country. He compares the best locations for the business. Tells how to build houses for layers, breeders, sitters or chicks, adapted to the colony system, the yard system and other methods. How to feed and manage. How to breed and select. Choice of breeds and crosses. Management for mild or severe climates. How to feed fowls and keep them at exercise without hard work. How to manage hundreds of sitters with little labor. How to raise brooder chicks and keep them alive and growing. Essentials of duck raising, and how to insure growth and fertility.

The latest things in incubation and brooding are also fully illustrated and discussed. The book contains 331 pages and 140 original illustrations, and is neatly bound in cloth. We can furnish copies at \$1 each postpaid. Address PACIFIC RURAL PRESS, 330 Market St., S. F.

Compressed Hay.

The baled hay that is being shipped from New York for the use of the British army in South Africa and the American army in the Philippines is being compressed by a new process. The hay is put up in bales cylindrical in form, about the size and shape of the old-fashioned nail keg, or 18 inches high and of the same diameter. When baled in this shape the hay is as hard as a board. The bales weigh about 145 pounds.

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The good thing about this new bale is that a mule can carry two 112-pound bales, and after he is fed off them for two or three days there is enough left for a cavalryman to use as a miniature rampart. The hay is packed so tight that a bullet would not go far into it.

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The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

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A New Tobacco.

Tobacco worshippers, says Meehans' Monthly, may be glad to know that, although there are some one hundred species already described by botanists, a new member of the family has been discovered on the Pacific coast, and named by Mr. Bandegree, Nicotiana Stocktoni. Mr. A. L. Stockton discovered it on Socorra island.

At the San Jose convention Mr. Gordon of Fresno told of the success that he had had in fighting vine hoppers by spreading alfalfa hay over the vines. The amount of hay is about a ton for 1,000 vines. Mr. Gordon said that at an expense of \$130 he had saved about \$1,500 worth of grapes this year.

The next Fruit Growers' Convention will be held at Marysville.

What is Speltz?

Salzer's catalog tells all about this wonder, also Million Dollar Potato. If you farm you need it. Largest Vegetable Seed Growers in America. Send this notice and 10c in stamps for 10 Rare Farm Samples and Catalog to John A. Salzer Seed Co., La Crosse, Wis. [F]

BROOKLINE, MASS., Sept. 13, 1893.

Mr. J. N. Danforth, Dear Sir:—This is to certify that I was laid up in bed six weeks from sciatica last spring and found no relief until I used your Tuttle's Elixir. Yours respectfully,

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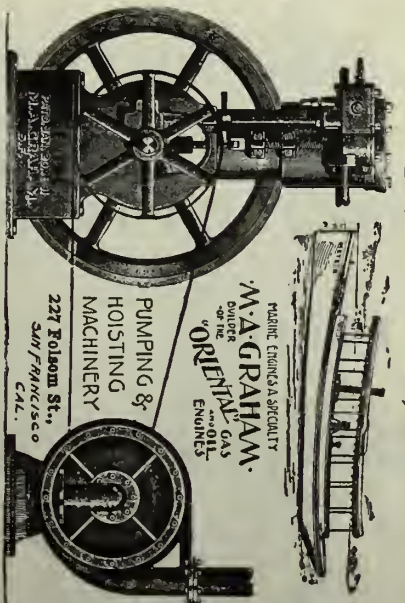
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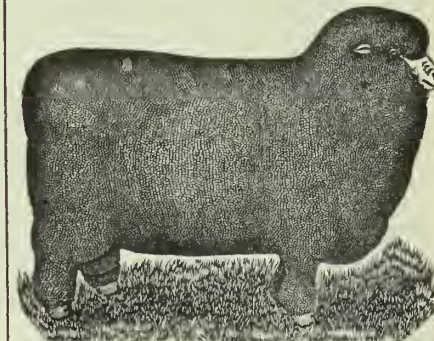


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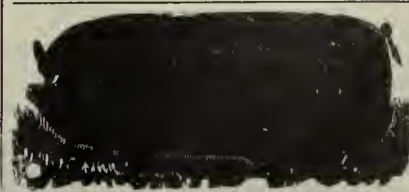


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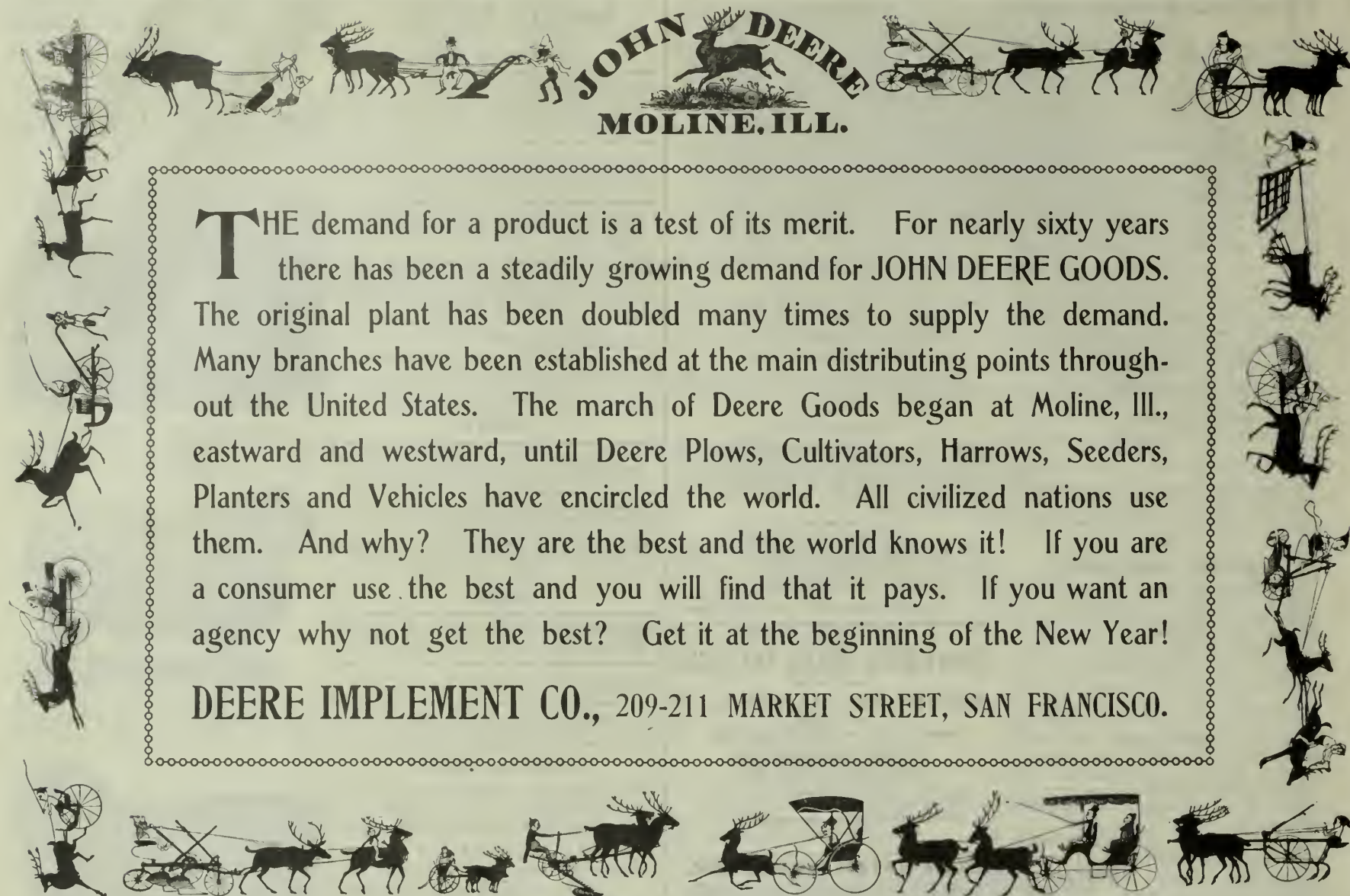
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 2.

SAN FRANCISCO, SATURDAY, JANUARY 13, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Current Wheels.

Readers who may be familiar with the appearance and operation of current wheels in irrigation ditches or along the margins of valley streams may be interested in the use made of the same device in the mountain stream known as Scott river, in Siskiyou county, the most northerly county of California. In streams which run low in summer and stroll around in their beds as they see fit the water lifter who wishes to use the wheel has to chase around and establish his construction wherever the channel may be, or else do a lot of diversion in order to bring the water to his wheel. In the case shown in the photograph the conductor of the enterprise evidently preferred to take his wheel to the water. He seems to have made cribs of rock to sustain his sideworks and hung his wheels where he could get the longest run of power. The device was installed for river mining, but other arrangements can readily be constructed to convey the water, which the engraving shows has been raised several feet from its natural surface, through a flume for irrigation of adjacent lands which lie below its flow.

The upper wheel is rigged not for water lifting, but for power, and this can also be conveyed by belt or cable and put to various uses. For example, in irrigation a current wheel is sometimes used to deliver water on the bank, where it can be distributed therefrom by ditch or it may be run for power to operate a pump to deliver water at a higher level than that to which the wheel could directly lift it by its own revolution.

There are several objections to current wheels, one of which is that their effective labor is limited in several ways. Another, and one which would suggest itself to any one who looks upon this picture, is that there is danger of a rise in the stream, which would tear out the wheel and land it in the next county or in the ocean, perhaps. This is always a certain menace to a current wheel, whether it be by the bank or in midstream, and it has to be provided for—perhaps by taking out the affair until the season for torrential flow is over. The windmill irrigators near Sacramento unship their windmills during the wet season, so that wear and tear and danger of blowing to pieces may be prevented, and the current wheel man has to be similarly circumspect in saving his mechanical bacon.

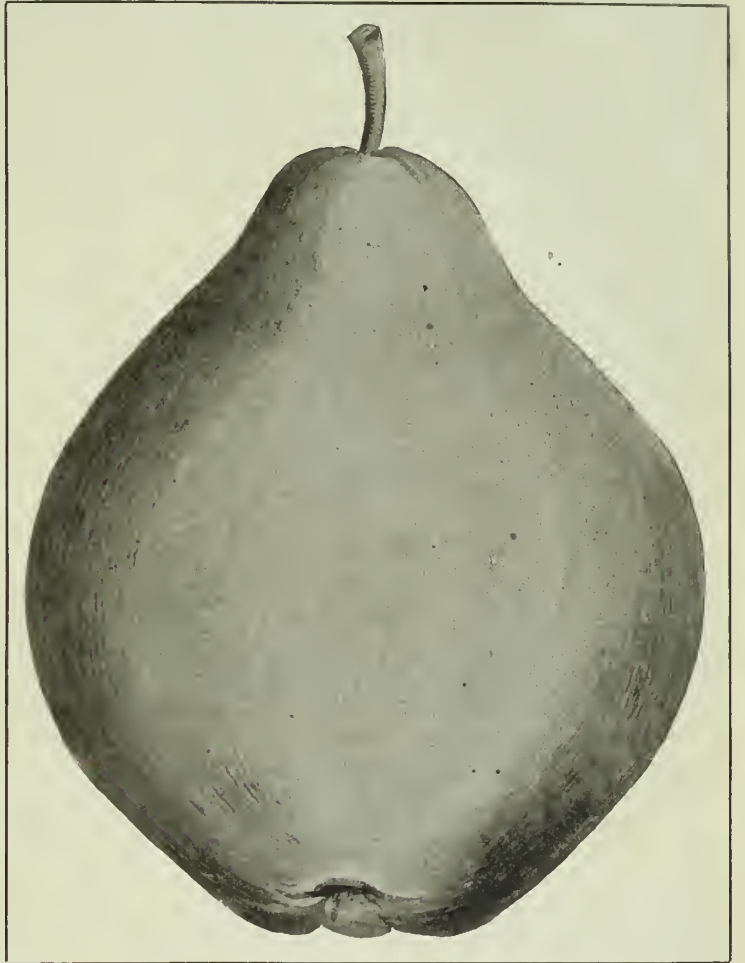
Despite this weakness the current wheel is, how-

ever, often very serviceable and is entitled to rank, under its limitations, as a very available and effective water lifting device.

The Rossney Pear.

Pear lovers have had some reason to be encouraged that ere long California may grow other pears than the Bartlett. It is true, of course, that a few other varieties have always been grown, and some of them marketed profitably by the veteran pear grower A. Block of Santa Clara and by others, and yet when one thinks of the superabundance of the Bartlett in the doings of growers, canners and shippers, the other varieties are almost wholly out of sight. There are reasons for this, of course. One is that the Bartlett, though not the best pear pomologically, leaves little to desire when beauty, popularity and adaptability for different commercial uses are concerned. Another is that California has such a range of early, medium and late-ripening localities that the Bartlett is in sight nearly all summer and fall. It is perfectly natural, then, that the Bartlett should be more valuable in California than in any other area of similar size in the world, perhaps, and the greater this advantage proves commercially the less will be the opportunity for other pears. Still something is being done with new pears, and there may be more still in the future, especially in places where some stronger variety may prove less subject to some pear troubles than the Bartlett is.

Lengthening the Bartlett season always excites interest, and the Winter Bartlett, an Oregon seedling, is attracting some attention on its merits and its season. Another variety, which now becomes prominent upon the basis of a good record in Utah and the good opinions of many Californians who have seen the fruit, is the Rossney pear, which is being introduced to California planters by the Lincoln Nurseries of Newcastle. The picture upon this page is said to be a fair representation of the fruit, and it is certainly very shapely and symmetrical. Those who are familiar with the history of the variety assure us that the Rossney pear is a chance seedling grown from a lot of seed planted at Salt Lake City about twenty years ago. In the fall, when budding, this particular seedling was noticed to be thrifty and a vigorous grower, so it was allowed to stand. At five years of age it bore its first fruit. Since then the tree has borne a full crop every year. The fruit is always of uniform size, shape and coloring. Neither blight, nor any other disease, has in any way affected the tree. The tree is very hardy, both in wood and fruit buds. The fruit al-



The Rossney Pear—A New Candidate for Favor.

ways averages much larger than Bartlett and its ripening season is said to be two weeks later than the Bartlett.

The pear has been known by its fruit to a number of Californians for the last four years or more. Mr. Burbank spoke of it in 1895 as of large size, very handsome form, and creamy yellow skin with crimson blush; rich, tender, creamy flesh of just the right texture, with no hard spots and an unusually small core; superior flavor, etc. The fruit is also well spoken of by other Californians who have seen it. There is certainly ample presumptive evidence of the value of the variety to make it desirable that it should be tried on a small scale in all parts of the State, in order that its local adaptations may be everywhere established and its commercial standing made out.

Arboriculture and Pomology at the Paris Exposition.

We are informed by Howard J. Rogers, Director of the Department of Education and Social Economy of the United States Commission to the Paris Exposition, that there will be held an International Congress of Arboriculture and Pomology at Paris, September 13 and 14. The programme of the points to be discussed at this congress contains questions of great interest, and of a nature to produce fruitful results. It is advisable that the United States be represented at this congress, and the U. S. Pomologist, Col. Brackett, President Watrous of the American Pomological Society, and President Berkman of the State Horticultural Society of Georgia are upon the committee. The organizers of the congress in Paris are desirous to have a wide American membership and Californians attending the exposition should certainly occupy front seats in meetings devoted to pomological subjects. All inquiries can be addressed to M. Nombrot, Secrétaire Général, a Bourg-la-Reine (Seine), Paris, France.



Current Wheels in Scott River, Siskiyou County, Cal.

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E. J. WICKSON, Horticultural Editor.

San Francisco, January 13, 1900.

Table of Contents.

ILLUSTRATIONS.—The Rossney Pear—A New Candidate for Favor; Current Wheels in Scott River, Siskiyou County, Cal., 17. Switchboard; Illustrating Method of Placing Community Exchanges, 28.
EDITORIAL.—Current Wheels; The Rossney Pear; Arboriculture and Pomology at the Paris Exposition, 17. The Week; Agricultural Labor in California, 18.
QUERIES AND REPLIES.—The Operation of the Siphon; Unfruitful Fruit Trees; For Home Pasture; Hairy Vetch and Bermuda Grass; Dairy Figures; The Closing Century; Farmers' Club Convention at Pasadena, 19.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending January 8, 1900, 19.
HORTICULTURE.—Olive Trees in California; Apple Culture, 20.
ENTOMOLOGICAL.—Pests Stopped at the Threshold, 21.
THE DAIRY.—The Transmission of Tuberculosis; Forage Crops Other than Grasses; Last Stages of Tuberculosis, 22.
AGRICULTURAL REVIEW.—23.
THE HOME CIRCLE.—A Wild Rose; "Bones," Non-Combatant; Care of the Sewing Machine; An Adventure in the Black Hills, 24. Uses of Old Flannel; A Bit of Wedding Cake, 25.
DOMESTIC ECONOMY.—Hints to Housekeepers, 25.
THE MARKETS.—Produce Market; Fruit Markets, 26-27.
PATRONS OF HUSBANDRY.—A New Book by Mr. Lubin, 30.
CORRESPONDENCE.—Fruit and Water in Eastern Tulare; Forest Tree Seedlings, 31.
MISCELLANEOUS.—Farmers' Community Telephone Exchanges, 28. List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents; The Great Convention at San Jose, 30.

The Week.

The official report upon the opposite page shows how wide-reaching and generous last week's storm was. All points are seen to be several hundred per cent wetter than last year at this date, and all except south of Tehachapi are a long distance ahead of the average for all the years recorded. Southern California has made a good start in the same direction and will come out all right this year. We had to run away from Los Angeles last week to get out of the wet. The San Joaquin looks like a vast lawn all the way from Bakersfield to Tracy, and the wild flowers are beginning to show their colors. It is, indeed, for moisture, warmth and verdure an incomparable winter; even the '49er remembers none better.

The great event of the coming week will be the assembly of fruit men at San Jose, seeking to establish their business on a surer and fairer basis of profit by the force of organization. We have already published the official call, and much besides, so readers of the *PACIFIC RURAL PRESS* are fully informed of the motive and the proposed method.

The markets are shaking off their holiday torpor. Spot wheat is about the same, but more ships are now available and there is more pressure to sell, as holders are firm. Wheat futures are, however, lower at all distant points and have declined in some measure here also. Barley is unchanged and dull. Large corn is lower. Fancy hay has a better feeling, but there is no change. Millfeeds are unchanged and easy. Beef is about the same, while mutton and lamb are higher. Receipts of hogs, both from Oregon and the East, are free, but the price holds well and is expected to continue. Butter and cheese have a lower range; in view of the feed outlook, no one is buying except for immediate use. Eggs also are rolling down; supplies are not excessive, but no one wants many. Young poultry is still selling well, but shades down a little. Ten carloads was the Eastern contribution of poultry last week. Dried fruit is in fair shape. Uncle Sam will soon open bids for a quarter-million pounds of apples, peaches and prunes. Fancy fresh apples were scarce. Oranges are doing a little better. Auction sales begin next week. Onions and potatoes are doing well and large white beans are higher. Wool is firm, but not much is doing yet.

The Hawaiian Sugar Planters' Association gives the number of tons of sugar produced on the Hawaiian Islands from October 1, 1898, to September 30, 1899, as 282,807, and that 304,603 tons are expected the present year.

Agricultural Labor in California.

TO THE EDITOR:—Will you give me the salient features and present status of farm labor in California; its present composition in classes and nationalities; relative value and efficiency; peculiarities, conditions, abundance or scarcity? Is it increasing or retrograding in efficiency? Were wages relatively depressed in the panic of 1894-97? Is much of it employed by the year; what proportion in harvest seasons only? What can you say of the relative condition and prosperity of the farm laborer and the industrial laborer in towns, in view of the difference in cost of living in town and country?—READER.

The foregoing is from an esteemed reader in an Eastern city who has a taste for economic investigations and whom we know to be actuated in his questioning by a sincere desire to arrive at the facts. He has no peculiar views to bolster up and he may be safely treated with cordiality and frankness.

We undertake the subject he moots with great hesitation, because conclusions of this kind should be drawn from close and comprehensive inquiry. No time can now be commanded for such investigation and the only way we can discern by which our correspondent's desires can be met lies through direct appeal to the readers of the *PACIFIC RURAL PRESS*, who are large employers of farm labor and therefore practically acquainted with its status in all respects. As an inducement, then, to our readers to contribute freely, we shall submit to them a number of propositions drawn from our own observation, which they may either affirm or deny, as they think themselves warranted in doing, and state their own experiences and observations on which their conclusions are based.

In the first instance, then, we take it that the proportion of white labor now employed in California agriculture is greater than ever before in the history of the State. The available supply of Chinese has been greatly reduced by the exclusion acts and the numbers now employed in field labor are so small as to be inconspicuous. Meantime the numbers of Japanese have increased and in some localities they have become a main reliance in some kinds of work, but their distribution has never attained anything like the breadth which the Chinese at one time commanded. At present Asiatic labor of both kinds serves a very good purpose for temporary uses, but is too restricted in volume to menace the white population or to maintain the antagonisms which once existed.

The experience of the last decade has fully demonstrated the superior efficiency of white labor in agriculture, and the profitability of such labor at a higher compensation is also conceded by most employers. It is also true that the present supply of white labor is of much higher grade than formerly. California has for the last few years been rapidly assuming the characters of a settled community. The shifting population is decreasing. In nearly all regions there is a certain resident labor supply composed in part of thrifty emigrants who are working earnestly to establish themselves in the State, and in part of those who have passed from youth to maturity in our midst. The superiority of such labor supply needs neither argument nor illustration, but conspicuous instances of it are found in all fruit growing regions. The millions of value brought to the State by the citrus orchards, the raisin vineyards, the deciduous fruit orchards and the vast canning and drying industries are now secured very largely by white labor, which has supplanted the Asiatic and has shown itself to be almost incomparably superior. In a less degree also white labor has replaced Asiatic in many field crops, though in others the Asiatic seems at present almost an indispensable element because other supply is not available nor content with the low wage rate which crops grown on a narrow margin of profit can afford to pay.

The course of wages has been influenced by local conditions in a very striking way during the last decade. The general depression and inactivity of the earlier half accomplished quite a marked reduction in ruling rates, and this was continued and emphasized by the drouth of 1898. Laborers, as a rule, cheerfully accepted lower compensation, because the occasion was so obvious. The situation would have been worse had it not been for local conditions which drew men into other fields of activity. The activity

in mining interests at various points on the coast attracted hundreds who could muster means to reach new fields. The opportunity to enter the army for service in the Philippines relieved others from distress. The activity of the metropolis in handling supplies for war and for distant mining regions was also a relief measure for the unemployed labor supply of the farming districts. This movement, in a way, checked the decline in wages, and those whose services were indispensable undoubtedly profited by it. The result of all these tendencies was that in 1899 there was a scarcity of labor in those agricultural regions that had crops to handle, and a considerable advance in compensation was secured for the limited period during which the help was required. Meantime the revival of confidence which was so marked during the last year, and the quick and profitable markets which some of our products found, awakened new activity in our cities and larger towns, and the beginning of improvements of all kinds, which had been some time deferred, created a new demand for labor and ushered in the present situation, which seems to afford profitable employment to all who earnestly desire it.

As to the term during which farm laborers are employed, it is unquestionably lengthening. Though still the extra demands at harvesting all sorts of crops exists, and in the nature of things always will exist probably, there is a better opportunity than ever for long terms of employment. The increase of the dairy interest in regions formerly almost wholly given to grain has of itself opened the way for steady employment which formerly did not exist. The development of fruit areas has had a similar tendency. The disposition to provide better quarters for laborers on agricultural properties is very marked; and so far as we have heard and seen, such investments on the part of employers have been found profitable in the greater loyalty and efficiency of the laborers secured. As to the proportion of the labor supply employed throughout the year or for a short period, we have no data; but if the figures were restricted to what is commonly termed farm labor, the proportion retained for the year would now be represented by a respectable fraction—much greater, in fact, than ever before. If the figures should include as farm labor the thousands who go from towns for orchard, fruit drying and canning work during its season, the fraction would be very small. But it is one of the most pleasant facts of recent years that our great fruit products can be so largely handled by white labor from towns as it now is. Twenty years ago it was thought impracticable, and growers were in much anxiety as to whence their fruit harvest help should come. To-day there is no concern whatever about it, for, though there is now and then a little pinch, the demand as a whole seems to be provided for.

As to the relative condition and prosperity of the farm and town laborer we have no fresh data. So far as we know the old facts and the old arguments are as true now as ever. The farm laborer has possibly a little less net income from a year's work than his town brother of equal grade of labor and equal sobriety and thrift, but his opportunities are immeasurably greater for using any surplus he may accumulate in establishing himself upon property of his own, or in becoming his own master upon leased land. There is now a better chance than ever for this because land is nearer its actual value in California than it has been for a number of years at least. In all parts of the State people who come with small capital, and large energy and self-denial, are placing themselves well by supplementing their means with the proceeds of labor done for others. They are helped to do this by the increased opportunities which our broader agriculture of the present day affords, and by the fact that Californians now appreciate white labor better than formerly because they are having experience with a better kind than in the old days. We believe that the agricultural laborer is well paid in California, and well appreciated if he is endowed with self-respect and the qualities which self-respect ensures.

These are a few general points suggested by our correspondent's questions. As we said at the beginning, they are open for discussion—not for tirades or denunciations. We shall be glad to have facts and such calm comment as will give the facts proper weight in the public mind.

QUERIES AND REPLIES.

The Operation of the Siphon.

TO THE EDITOR:—I have a $\frac{3}{4}$ -inch galvanized pipe 400 feet long made into a siphon by joining the two parts with a fitting so they turn a square corner. The siphon ran three or four days, the steam getting less until it stopped. The lower end of the siphon is about 4 feet below the level of the water into which the upper end is plunged. Does the air collect in the upper part of the angle in the pipe and stop the water? Would a pipe bent on a curve be better than a square joint? Will air collect in any upward bend of a pipe and stop the flow of water where this would not happen if the pipe were free from bends along a true grade? Is there air in the water which can thus collect? Does the siphon work because of atmospheric pressure or because of suction of the water caused by greater weight in the longer arm?—H. J. REDMOND, Adelaide.

The local schoolmaster ought to be the referee in such cases. There is air in the water and it does collect at the high point and stop the flow of the siphon. A curved pipe is better for a siphon than a square corner, because there is less distance and less friction and more water will be discharged in a given time. In the upward bends of a crooked pipe air will collect, and whether it will stop the flow of water or not depends much upon the pressure of the head of water. In a siphon the pressure is very slight and is simply the difference of atmospheric pressure upon the two levels of water. At the higher level it is ordinary atmospheric pressure minus the pressure of the column of water in the short leg of the siphon; at the lower level it is atmospheric pressure minus the pressure of the water column in the long leg of the siphon. Consequently the pressure is less at the end of the long leg and the water falls out there. As this difference is only 4 feet in this case in a length of 400 feet of pipe, the pressure is small, and as the pipe is also small the friction is large. You will have to refill your siphon and start over; the conditions are not favorable for a long run of it.

Unfruitful Fruit Trees.

TO THE EDITOR:—What can you tell us about old fruit trees not bearing? We have old trees of apple and cherry on the mountains which a few years ago bore abundantly, but though they are strong in growth and healthy the fruit crop is small or lacking.—SUBSCRIBER, Santa Clara county.

If your trees are strong and healthy the first thought is that some atmospheric conditions have most to do with their lack of bearing. Certainly if the soil was lacking in plant food you would not get large and thrifty trees. You are quite as able to judge as we as to whether your region is subject to frosts which are calculated to render the blossoms ineffective. Another condition under which many trees are proving unsatisfactory in bearing is the lack of moisture in the soil during the latter part of the summer. Many trees will make satisfactory growth while the moisture lasts and then, as the time comes for the completion of fruit buds for the following year the moisture becomes scant and the bud is not strongly developed. When this is the case the trees may blossom and yet not set a satisfactory amount of fruit. If this were the case, however, it is likely that your trees would take on the habit of bearing every other year, because the resting of the tree from fruiting one year would usually enable it to store up vitality enough to repair its growth for the alternate year. We are coming to learn in California that many places, especially the uplands and ridges, carry sufficient water to grow young trees and to bear fruit for a certain number of years where there is not enough for the uses of an old bearing orchard; and experience also is that wherever preparations are made to give the trees a good soaking about mid-summer, bearing of fruit is thereby promoted.

For Home Pasture.

TO THE EDITOR:—If you know of any plant that you could recommend for a home pasture on moderately fertile land please let me know. Our land has a light gravelly top and a limey clay subsoil, and a great deal of lime in the water. It produces alfalfa nicely, but needs irrigation during certain seasons of the year to make a pasture of it. Then the gophers that the alfalfa brings make it nearly as bad as to be without the feed.—E. J. D., San Jose.

We do not know any plant which will yield more to the acre or give so little trouble as alfalfa on suitable soil and with adequate water. You can make a sub-

stitute, and perhaps get more feed for more work, by putting in a winter crop of oats and peas, followed by a summer crop of sorghum or corn, but this keeps you farming most of the time, and that is not what the owner of a home pasture generally desires. If the land is suited to alfalfa we would rather give some time and money to getting an adequate irrigation supply and to drowning, trapping or poisoning the gophers, than to abandon alfalfa growing.

Hairy Vetch and Bermuda Grass.

TO THE EDITOR:—In your paper dated Dec. 30th, on page 422, there is a hairy vetch (*Vicia villota*) mentioned. After it has been cut with the grain hay will it continue to grow like alfalfa for further cutting? If so, for how many? until the frost? I enclose a grass which I am told is one of the ruinous ineradicable kinds. I want your verdict, guilty or not guilty.—LEARNER, Bakersfield.

The hairy vetch is an annual and will not grow for continuous cutting as alfalfa does; still it will grow for a second cutting or it will produce a seed crop—providing the first cutting is done before the plant is too far advanced in maturity. Other annuals, like the cereals, for example, will do that if there is moisture enough in the soil. Winter rye can get two feet high and be mown and make a second crop afterwards. The hairy vetch is not very subject to frost and frost will not end its cycle of growth. That will end when the seed matures and the plant dries up, just as with ordinary garden or field peas. The sample you send is Bermuda grass—guilty of staying where you do not want it as long as it likes in spite of all you can do.

Dairy Figures.

TO THE EDITOR:—We like your paper very much for its dairy discussions. One thing we would like is a monthly statement of all the dairies in the State, as to the prices received for milk and butter, as it would be good to post those who, like ourselves, sell milk to creameries. We have been selling at 60 cents per hundred, but commenced selling by test on the 8th of this month.—DAIRYMEN, San Joaquin county.

We always publish creamery reports when we can obtain them for the very reason that our correspondent cites, so that all readers can compare experiences and results. It is hardly practicable to get monthly reports, because creamery men are too busy to send them regularly, or for some other reason it is neglected. We shall always be glad to receive and publish them.

The Closing Century.

TO THE EDITOR:—Will you kindly state briefly in the PACIFIC RURAL PRESS by what process of reasoning you arrive at the conclusion that Jan. 1st, 1900, is the close of the nineteenth century?—A SUBSCRIBER, Colusa.

We did not say that. We foresaw that any such statement would plunge us into a controversy for which we are not prepared. What we did say was this: "The closing of the century will mark a new epoch in the higher life of the metropolis of the Pacific coast." This, we take it, is a very fine straddle of the question and was so intended. The century has certainly been closing for some years, and if it wants to be another year closing we have no objection.

Farmers' Club Convention at Pasadena.

We had the pleasure of attending a four days institute of the Farmers' Club of Southern California at Pasadena last week. Delegates were present from nearly all the farmers' clubs south of Tehachapi, and excellent proceedings were had. We begin in this issue the presentation of the leading topics presented, and as the papers were in many cases the result of systematic thought and continued discussions in the clubs, they will prove exceptionally suggestive and valuable to readers in all parts of the State. The meetings followed immediately upon the grand rose tournament and parade in the streets of Pasadena, which collected people from long distances, and was a beautifully and characteristically Californian spectacle. The meetings were conducted by Prof. A. J. Cook of Claremont, representative of the University of California in the southern part of the State, and were excellently administered throughout.

A VERY interesting occasion was observed at the University Experiment Station last week. The sixty-seventh birthday of Director E. W. Hilgard was commemorated by the station staff with a congratulatory visit, during which a handsome silver set of writing table fittings was presented. Prof. Hilgard was heartily congratulated upon his constantly increasing strength and ability to resume the many activities which his position imposes.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 8, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

The temperature for the week has averaged 6° above the normal throughout the State, the Sacramento and San Joaquin valleys having experienced unusually warm days and nights for the season. Rain has fallen nearly every day in the central and northern portions, the precipitation at San Francisco and in parts of the Sacramento valley being over three inches, while in southern California and the San Joaquin valley the rainfall exceeded one inch.

Rivers and creeks have been up to high water mark in the central and northern portions, but no serious damage has been reported except to bridges.

Farm work has been practically suspended in the northern San Joaquin and Sacramento valleys, and in portions of the coast and bay sections, owing to excessive moisture, but plowing and seeding are progressing in the south, where the recent rains have been of inestimable benefit.

Early sown grain is in better condition than for many years at this season, and prospects for good crops are excellent. Alfalfa and pasturage were benefited by rain and warm weather. Southern California oranges are maturing rapidly, and it is expected that the yield will be entirely satisfactory.

SACRAMENTO VALLEY.

The precipitation for the week was over three inches in some sections, rain having fallen nearly every day throughout the valley. The temperature averaged several degrees above normal.

Farm work is suspended, owing to the wet condition of the soil, and but little work is being done in orchards and vineyards. Grain and pasturage continue to grow rapidly.

COAST AND BAY SECTIONS.

Rain and warmer weather have been generally beneficial, bringing up recently sown grain and improving pasturage. Plowing and seeding continue, except in localities where the precipitation has been excessive. Some pruning is being done.

Prospects are excellent for good crops of grain, hay and deciduous fruits. In some places the acreage in hay will be less than last year's.

The heavy storms on the 1st and 2nd damaged bridges and caused landslides in some sections.

SAN JOAQUIN VALLEY.

Heavy rains on the 2d and 3d retarded plowing and seeding, but otherwise were beneficial. Warmer weather toward the close of the week benefited grain and pasturage. Farm work is now progressing in most sections, and if present conditions continue for two or three weeks, a large area will be plowed and seeded. Pruning is progressing in orchards and vineyards.

SOUTHERN CALIFORNIA.

Over one inch of rain fell during the week, followed by warm weather, both being of great benefit to all growing crops and fruit trees. Early sown grain is in better condition than for many years at this date, and prospects for good crops were never better. Plowing and seeding continue. Oranges are coloring rapidly, and the yield will be equal to expectations. The celery crop is heavy.

LOS ANGELES SUMMARY.—Generally cloudy, moderately warm weather for the season prevailed during the past week, with fine rains, which were of immense benefit to vegetation—in fact, they came in time to save grain and feed. Farming prospects were greatly improved and there is an encouraging tone to the reports, which have been rather pessimistic of late. Grain, feed and pasture are growing finely. The balance of the seeding will now be rushed and a large acreage put in. The rain fell steadily and gently, so that none was lost and the soil became well soaked. In places the lighter lands only can be worked at present. Oranges are ripening fast. Picking has been slow since the rains, but with favorable weather work in orchards will become active. Some deciduous fruit trees are commencing to bloom, and some are leafing.—GEORGE E. FRANKLIN.

EUREKA SUMMARY.—Continued rains have prevented plowing. Few potatoes remain in the ground. Grass is growing rapidly, and is in better condition than ever before known in January. Stock thriving.

The following data for the week ending 5 A. M. Wednesday, January 10, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka.....	1.14	30.06	13.96	18.80	38	66
Red Bluff.....	1.00	14.66	6.73	11.64	42	62
San Ramon.....	1.69	13.11	5.71	8.62	40	61
San Francisco.....	2.46	14.38	5.90	10.31	46	60
Fresno.....	1.15	6.10	2.61	3.97	38	64
Independence.....	.22	2.08	0.70	2.57	28	56
San Luis Obispo.....	1.88	12.41	3.83	6.77	40	66
Los Angeles.....	1.17	4.57	0.86	7.24	42	70
San Diego.....	.66	2.60	1.77	3.79	42	70
Yuma.....	.08	0.66	1.32	1.80	48	72

HORTICULTURE.

Olive Trees in California.

By J. A. BROWN of Hemet, Riverside County, at the Farmers' Club Institute at Pasadena.

In preparing this paper, I confine myself largely to local conditions, which are all that I can speak of with definite knowledge. Prof. A. P. Hayne of the State University, who has been visiting various parts of the State investigating olive culture, will soon make his report, which will, I hope, supply the much desired information.

IN SOUTHERN CALIFORNIA.—In southern California I believe the olive industry is making satisfactory progress in those localities where the natural conditions are favorable, and when growers have taken proper care of their orchards, intelligently pruning, irrigating and cultivating whenever necessary. In this southern country each of these operations is as essential to the profitable development of the olive as to the orange. So far as my observation goes, I have yet to learn of a case where those conditions have been met that the olive has not given satisfactory results.

I am aware that there are localities in southern California where the olive does not require irrigation. An instance is at the old Mission of San Diego, but there are comparatively few trees growing on such favored spots. While the olive tree will endure much abuse and neglect, I believe no tree in my orchard responds more readily and profitably to good treatment.

OLIVE OIL MAKING.—As an olive grower, I have been much encouraged by watching the development of some of the olive oil manufacturing establishments in southern California during the past few years. I refer to those who have given the business their personal attention, conducting it upon sound business methods. I believe that the business of manufacturing olive oil offers opportunity for profit equal to that of mercantile pursuits generally; but, as in other lines, there will be individual failures, and these will be fewer as soon as it is realized that the business demands intelligent, economical management equal to that given other commercial enterprises.

LOCAL ESTABLISHMENTS.—I recently visited an olive oil plant at old San Diego that had just added a hydraulic press to their already extensive establishment and was informed that they were behind on their orders for both oil and pickles. They, in common with other oil manufacturers in San Diego county, were paying \$70 per ton for olives of oil grades and \$100 to \$110 for pickling varieties. As I did not want to undertake oil making this year, I wrote to Pomona asking an offer for my oil olives, and was not surprised to get an answer offering \$35 per ton f. o. b. cars at Hemet. I say that I was not surprised because the offer corresponded with that made by the same party two years ago, which was exactly 50% of that I received from San Diego buyers. It is no wonder that olive growers at Pomona are discouraged, and in their despondency have dug up their trees. The case presents an excellent object-lesson in favor of co-operative oil presses, owned by the growers and conducted on the same lines as are our creameries.

OBSERVATION ABROAD.—While in Italy three years ago, I visited an olive grove a short distance from Florence where the olive mill pressed the fruit of the neighborhood for a part of the proceeds, and this practise I was informed was general.

A CALCULATION.—Given the price at which the olive oil is sold, it is a simple matter for the growers to compute the value of his fruit. Take as a basis two gallons of oil to 100 pounds of olives, allowing \$10 per ton for cost of reduction. Thus 2000 pounds of olives gives forty gallons of oil at, say, \$3 per gallon; then forty gallons yield \$120, less cost of \$10, and the return is \$110 per ton for the olives. Then \$35 per ton for the fruit is equivalent to \$1 per gallon for the oil.

LOCAL EXPERIENCE.—As I wish to present the practical side of the industry, I will confine myself as much as possible to my own experience. About two miles south of Hemet, in the San Jacinto valley, at an elevation of about 1600 feet, on a hillside with a northern exposure, the soil of a granite formation, I get the following results:

From four acres of Mission olive trees, now eleven years old, I got 10,580 pounds in 1897; in 1898, practically none; in 1899, a yield about equal to 1897. The hot, dry winds that we sometimes have in the spring are, I find, a source of greater danger to the blossom than the frost, for this reason: If on a side hill, I prefer a northern or eastern exposure, and, as a further precaution, I believe in cutting the trees well back and encouraging them to spread out, thereby affording as much protection as possible.

In addition to the four acres referred to, I have about thirty acres of five-year-old trees, some of which, considering their size, have this year yielded good crops. Among them I will name in the order of fruitfulness the Uvaria, Columella, Manzanillo, Ob-longa, Santa Catarina and Mission. The Nevadillo Blanco does not do well with me, and indeed I have no variety out of over twenty that so far has grown

or borne better than the Mission after it reaches its bearing age. Besides, it has the advantage of doing well on its own roots, and is considered the healthiest of all commercial varieties. Where the soil is not too rich, it makes a good oil, and for a ripe pickle I have none equal to it.

FINANCIAL ASPECT OF THE OLIVE.—I will give a statement of the approximate financial returns of the past three years from the four acres of Mission trees above referred to. I say "approximate" because this year's crop is only partly harvested:

RECEIPTS.	
1897—1,430 gals. pickled olives at 55c...	\$ 786 50
2,000 lbs. used for oil.....	100 00
1898—practically no crop.....	
1899—1,000 gals. pickled olives at 65c....	650 00
3,000 lbs. for oil at 34c.....	105 00
Total.....	\$1,641 50
EXPENDITURES.	
Cost of picking at 34c per lb.....	\$150 00
Cost of pickling.....	125 00
Cooperage.....	121 50
3 yrs. care orchard, \$17 per yr.....	204 00
Water tax, say \$2 per acre.....	24 00
	624 50
Balance.....	\$1,017 00

This would equal \$84.75 per acre per year. This year I am pickling none but a first grade of fruit, which I sell from 65 cents to 75 cents per gallon, and which accounts for the increase of price over 1897.

ESSENTIALS TO SUCCESS.—From my experience and observation I conclude that the success of olive culture in southern California depends upon, first, favorable climatic conditions; second, the variety and cross-pollination; third, irrigation; fourth, pruning and cultivation; fifth, the ability to market the crop.

Each of these is, as I have already stated, absolutely essential to the profitable prosecution of the industry. While in some localities olive groves have been dug up because of their unfruitfulness, yet, as an evidence of the confidence in the olive tree in our section, a neighbor, having a four-year-old olive orchard with fine bearing deciduous trees alternating, this fall dug up the latter, giving the entire space to the olives. I will state in this connection that black scale does not exist in the San Jacinto valley.

MARKETING.—I have tried shipping to Eastern jobbers, guaranteeing them against loss, and while I made some customers, it did not prove a satisfactory method. As olive growers, we will either have to take concerted action to extend our market in the East or individually confine our efforts to just such cities as we have reliable representation through social or business connections. Better to concentrate our efforts in one city through a good agent, well paid, than scatter the same amount of energy over a whole State.

My trade in pickled olives in California and Arizona has increased each year, so that this season I have no trouble in disposing of my crop in these markets. Indeed, I have not been able to supply the demand so far.

As to oil, my experience has been confined to a small press from which I have made only a few gallons each year experimentally. With the development of the orchards in my neighborhood, I predict the establishment of a co-operative oil mill in the near future.

PROTECTION TO THE PRODUCT.—Now that the imported oil is being put up under California labels by self-styled manufacturers, the danger to the native product is intensified and the necessity for immediate protection is self-evident, for it is not only adulteration that we have to contend with, but sophistication in its most dangerous form—selling the imported article, representing it to be the genuine California product. The consumer pays more for the native product, believing it to be pure. This confidence can only be maintained by protecting the public in the use of genuine oil. A remedy for the evil can be found in a method which has the merit of having been tried and found to work well in more than one country in Europe—countries, too, that have laws against food adulteration much more rigid than ours. This system is called "analytical control." This is fully described in the British Food Journal of January, 1899. [The speaker read at length from this journal.] The regulations briefly stated are the applicants' goods are analyzed, and, if found "pure, genuine—good and properly labeled," they are placed under analytical control and an official stamp affixed to each package. Private purchasers or consumers of a controlled article can have such analyzed free of charge, if in the original package, on application to any of the Controls' representatives who are experts of recognized ability and position.

The Control, of course, is comprehensive in its scope, applying with equal force to all articles that are subject to adulteration. It will be seen that it does not remove any of the elements of competition, and each member is directly interested in the detection and exposure of any fraud in connection with any of the goods bearing the stamps of the Control.

CONCLUSION.—In conclusion, the points that I desire especially to emphasize are: The necessity for irrigation of olive orchards; co-operative oil plants; concentration in marketing and analytical control.

Apple Culture.

By EDWARD BERWICK of Monterey County at the Fruit Growers' Convention at San Jose.

Prior to his talk on apple culture Mr. Berwick pinned on the wall his notes—a sheet of white cloth—on which was painted a large, black capital P, the initial letter of all points touched on, these being appended below, as follows: Preliminary, position, plowing, planting, pollination, pruning, pests (painted very black), picking, packing, prices, profits, pie, pudding. Mr. Berwick spoke something as follows:

MR. CHAIRMAN, LADIES AND GENTLEMEN: I must crave your indulgence for departing somewhat from the printed programme. I have no "written essay." I will, however, essay to talk to you on apple culture, and you must assay what I say and separate the gold of truth from the dross of error. When I was a youngster I was taught to mind my Ps and Qs. Tonight I'll mind the Ps only (referring to his chart). They are the points I hope to make. The Qs shall be yours—the questions you put to me afterwards.

PRELIMINARY.—What king goes to war without first sitting down and counting the cost? So, likewise, must the would-be apple grower. He must size up not only his pecuniary pile, but his pile of patience and perseverance. Can he afford to wait ten years for a harvest? Can he exercise ten years of "eternal vigilance" in his unceasing fight with legions innumerable of untiring foes? Then, does he sigh to be an apple king, or will he be happy as an apple princelet, or even a plain apple grower? Take my advice and don't try to own the earth. Let the other fellow have a chance as well.

POSITION.—Determine what kind of apples you want to grow and to what market you expect to ship them. If you want to hit the early market, a location for this purpose will not be suitable for main crop or late-keeping apples, and vice versa. Get as near cheap transportation facilities as possible, and don't plant your orchard too near the village school; Young America has a passion for green colic. See that the soil suits the variety—or varieties—you fancy, and that the rainfall record of dry years in the past warrants your planting at all in that particular locality. See if the elements of fertility abound in your soil, by having thorough analyses made by competent chemists. Or take the credentials the past harvests have given to that soil; but don't think any old soil is good enough for fruit trees. Don't decide in haste and repent at leisure. Don't swallow all the first land shark tells you. Consult Wickson's "California Fruits" as to what localities are best for certain varieties.

PLOWING.—All I can say is: plow as deep as you can, and then just a little deeper. Remember it is your last chance for unobstructed plowing of all your ground.

PLANTING.—As to distance, 30 feet is not a bit too far. I have some trees 15x30 feet, and three trees so set will not give as much fruit as one 30x30 feet; I usually prefer yearling trees, and cut them back to 20 or 24 inches above ground. Early in the season, say, mid-January, is the time I find best for planting in normal seasons. Should the season prove dry, give twenty gallons of water to each tree soon after setting, and once or twice thereafter, as occasion dictates. As to varieties, stick to staple goods that the market calls for. Spitzenbergs usually sell best; Newtown Pippins are a world-staple; Bellefleurs are in immense demand in America; White Winter Pear-mains bear early and heavily, but price is not so good; Red Astrachan is a good early for near markets, but, if left to get near ripe, soon blackens in transit; Gravenstein is a first-class shipper and probably the best all-round second early, if you can find a locality to suit it; it sells well.

POLLINATION.—Pollination demands that you should not plant solid blocks of single varieties, but that every third or fourth row should be of a different variety; that cross-fertilization, which is said to produce better and larger fruit, should be easily effected. This subject is fully explained in the Agricultural Year Book for 1898, which you can obtain from your Congressman at Washington, and it would take too long to detail here. Lack of attention to this subject sometimes results in lack of crop.

PRUNING.—Pruning varies as varieties vary. The growth of a Y. N. Pippin tree and a Bellefleur tree obviously demand entirely different treatment. I am a believer in low heads, for the following reasons: The tree does not waste its strength in supporting a huge trunk; the wind has less leverage on a head near the ground than on a head capping a 12-foot trunk. The branches thereof sway less and do not throw their fruit so easily. Pruning, thinning and picking are each more readily accomplished when the head is near the ground than when a 14-foot step-ladder has to be climbed to get to it. The trunk is effectually protected from sun-scald, and fruit on the lower limbs in the interior of the tree get the benefit of heat and light reflected from the ground around. Spraying is also easier. Prune for several years to make wood rather than crowd your young trees into fruit-bearing; it will pay you in the long run.

PESTS.—You will notice that I have printed

"pests" very black on my chart. If you'll believe me they are even blacker than I have painted them. They are truly the orchardists' "bete noir" (black beast). Summer and winter alike they demand eternal vigilance. Probably the worst, or most insidious, is the woolly aphis, called in Australia "American blight." To kill the aphis as it appears above ground, the only method I know is to dab the clusters with a brush charged with gasoline. The process is tedious and expensive, but it pays. It saves your fruit from becoming all sticky and black and your twigs from being disfigured and devitalized by a mass of unsightly excrescences. To get at the creatures below ground tobacco dust or ashes liberally applied at the root crown are both recommended. Do not use coal oil either above or below ground; it will injure your trees.

Resistant roots, such as Northern Spy (pieces of which with auxiliary roots were sent out by Sec'y Lelong last spring), should, if possible, be tried in any new plantation. Codlin moth is now present in nearly all apple sections. Bands of saeking, to which the worm resorts for pupation, are valuable if properly examined and the worms destroyed about every two weeks; also Thissell's trap, a globe of wire screening tacked tightly around the tree and enclosing the band in a moth-proof cage, may be used to obviate the need of searching the bands. In either case all loose bark must be scraped off. Paris green sprayed according to the University of California Bulletin is still the remedy in best repute for efficiency. Lime, sulphur and salt wash for scale, applied in winter, and Bordeaux mixture for scab when needed are both advisable. Leaf roller, canker worm and spear slug are all killed by the Paris green wash.

For leaf mildew dry sulphur sprinkled through an old barley sack, when leaves are damp from dew, is a good preventive. Those who want to know more of insect pests should attend the forthcoming lectures at Stanford University, beginning February 5th. Professors Comstock and V. L. Kellogg are both expected to be there to instruct the visiting fruit growers.

PICKING.—If you want your fruit to keep well, pick before seeds get quite black. Handle as you would handle eggs. Put an old sack or a wad of leaves or straw at the bottom of your buckets or baskets so as not to have the first-picked apples rolling around on hard material. Handle as little as possible. Sort out any defective or wormy fruit and dispose of it at once; do not ship it to glut the market with trash and spoil the sale of your own good fruit. Hogs, driers, cider presses and vinegar barrels are all available.

PACKING.—Pack in standard size boxes, 10x11x22 inches. This size box was adopted as a "free package" when the rule was made that apple boxes not be returned to the shipper. The box was reduced from 11x12x22 inches, to compensate the shipper for the loss of his box by using a box that held fewer apples. Now some growers are altogether too generous; they give the old amount of apples and a "free package" as well.

Pack honestly, same size and quality throughout; but the trade expects you to pack your most highly colored fruit on top, so as to please the eye. The eye does the buying usually in all commodities. For green or yellow apples line your boxes with red paper. White wood boxes are preferred by the trade. Be careful not to have your boxes under-filled. At the ends the fruit should be just on a level with the top of the box, but should crown up at least half an inch in the center, so as to nail every apple snug in its place, not to rattle in the box when it is shaken. If the end apples are too high, nailing on the lid is apt to bruise them, and on opening the box big black spots disfigure your fruit and diminish its price.

PRICES.—Prices are usually good if you have fine, well keeping, bright colored, nice flavored fruit. If you care to study the curve in price in foreign markets, there is a chart published by Woodall & Co., of Liverpool, giving the ups and downs for the last five years, on the basis of Baldwins of four classes, Canadian, New York, Boston and Maine. Canadian are invariably highest, probably because the barrel is full weight. Early spring or late winter usually bring biggest prices. November is about the worst month to sell. Often in our San Francisco market Thanksgiving market is as good as any for ripe, high colored fruit. The greatest apple mart in California is Watsonville, Santa Cruz county. Apples sell for cash, f. o. b. Bellefleurs ranged this year from 75c to \$1 a box, and the demand exceeded the supply. The business there is almost wholly in the hands of Slav shippers.

PROFITS.—Profits depend much on the grower's willingness to give liberal care to his business. Don't try to get rich by declining to spend the needful money to fertilize, prune, cultivate and spray your orchard. Don't be afraid to thin your fruit because you think it expensive and fear there will not be enough left to make a crop. In orcharding, follow the scriptural injunction, "Cast thy bread upon the waters and thou shalt find it after many days." Treat your trees in generous fashion and they will respond generously; act the niggard toward them and they will repay you in kind. Some Watsonville orchards pay their owners from \$150 to \$250 an acre per annum, and then yield so bountifully as to make fortunes for the shippers, whose business is simply to

pick, pack and ship. It is safe to say that so long as apples will bring 75c to \$1 f. o. b. there is a handsome profit for the careful grower who handles his own fruit.

PIE.—Pie, next in my notes, demands your special attention. At a former convention Mr. O'Brien suggested, to my astonishment, that it was necessary to start a campaign of education to teach the English people to eat fruit. Having myself had considerable knowledge of that people in their homes, I replied that if Americans would themselves eat fruit as English do, there would be little left to export. Pie in particular does not consist in England of a thin layer of over-sweetened fruit between two layers of indigestible, half baked paste. Your English cook takes a dish from 2 to 4 inches deep, fills it, piled up, with fruit, adding sugar and a drop of water, inverts an empty cup in the center to catch the juice, puts on a light, flaky crust, and bakes till the fruit is tender and the crust a rich brown. Then this pie is not served in little saucers, but in large pie plates, and two good platefuls are allowed the hungry school-boy.

PUDDING.—Pudding is made in the same luscious fashion. A light crust of suet, flour and water is spread on a cloth (previously wrung out of boiling water and then dredged with flour); apples, cored and sliced, to fill a globe of say 8 inches diameter, are then placed, with spices, cloves and water, in the crust, the edges thereof are drawn up and wetted to make them adhere and form a water-tight globe, the cloth is tied tightly, and the pudding plunged into a pot of boiling water, and boiled fast for four hours. Apples by the ton are used daily to make these delicious puddings for the city of London alone. If all America would enjoy these splendid combinations of flour and fruit as do the English, Americans would be a healthier, happier and more pie-us people, and apple culture would flourish in the land a thousand fold.

ENTOMOLOGICAL.

Pests Stopped at the Threshold.

By ALEXANDER CRAW, State Quarantine Guardian, at the Fruit Growers' Convention.

It is not necessary to enumerate the destructive insect pests that have damaged the orchards and perplexed the orchardists of California, but it is not generally known that nearly if not all of them are introduced species. Less than three decades ago the orchards and gardens of the State were very free from insect pests; such an apparatus as a spray pump was unknown, and a fumigating outfit had never been heard of. The Spanish padres saw the possibilities of our soil and climate for fruit culture and experimented in a small way on lands adjoining their mission buildings: Their young plantations were nearly all raised from seed and were protected from the roaming herds of cattle by hedges of opuntia, a species of tall-growing cactus, with flat, spiny leaves, bearing edible fruit, known as prickly pears, which were much relished by the Indians of the southern counties. Some of the missions had more pretentious barricades for the protection of their trees and vines in well-built adobe walls. These orchards were thrifty and clean. Some of the more enterprising pioneers who came to California before the "days of gold" planted trees as a business proposition, and these, like the mission trees, were nearly all seedlings or propagated from the Mission trees.

With the change of government, and the rapid increase of population, through the discovery of gold, a good home market was created and orchard planting made rapid strides.

INTRODUCTION OF PESTS.—The enterprising Americans determined to have and grow the best fruits known, so imported trees and plants from other countries, and with them came the pests. The natural enemies of the latter were left behind in their native countries or died on the way, so the scale bugs and other pests had a clear field and spread rapidly. Unfortunately for the good name of California, some of the pests were first scientifically described and named here, and popular names were given that conveyed the impression to outsiders that the insects were natives of this State.

A State Board of Horticulture was created by an act of the Legislature to look after the fruit interests and the Governor was given the power to appoint the members. This board was given authority to make regulations for the purpose of preventing the spread of fruit tree pests, and a subsequent act gave it the appointment of an officer to attend to quarantine work.

I will briefly give you a list of some of the pests that have been stopped at the threshold during the time that the board has honored me with this appointment.

HOW INTRODUCTION MAY BE PREVENTED.—Each of the fruit-growing counties, as you are aware, has the power, through its supervisors, when petitioned, to appoint a County Board of Horticulture to work in

conjunction with the State Board in preventing the introduction of infested trees into its districts by rail. Where the county officers have received the support of the supervisors, good work has been done, and the courts have sustained us. Ninety per cent more money has been spent trying to stamp out pests that were formerly introduced into the State than has been spent in keeping others out, and then we do not compute the enormous damage and loss caused by their presence.

When the quarantine regulations were enforced, various interests and supposed rights came in conflict with them and for a time we worked along paths not strewn with flowers. Even now we run against bellicose individuals who think we have no right to interfere with anything they may bring. They finally conclude that we have the better of the argument and retire, although not always gracefully.

AN AMUSING INCIDENT.—One of the most amusing incidents in my work was upon the arrival of an old Scotch lady, who had been to Scotland on a visit and came back by way of the Northern Pacific and steamer from the Sound. When she came down the gang plank of the steamer I noticed something familiar and remarked that I wanted to look at her plants. She was delighted that they should so soon attract attention upon their arrival, and began to explain to me how much care she had bestowed on them on the long voyage across the Atlantic and the great American continent. They were in pots and one was just then coming into bloom, so there was a question regarding its identity. She was terribly shocked when I informed her that I would have to destroy them. She pleaded that she would keep them in her own garden. We have all the varieties of thistles we want, so she lost her pets and insinuated that I had no patriotism.

The Scotch thistle was introduced into Australia and overran that country. Laws were enacted to have it stamped out, but the thistle is there yet.

WHAT AUSTRALIA HAS CONTRIBUTED.—Australia is the land that gave to California, Cape Colony and Portugal the terrible "cottony cushion scale" (Icerya purchasi). We are also indebted to it for the destructive "red scale" (Aspidiotus aurantii) of the orange. From that country and Samoa came orange trees and fruit infested with small "snow scales" (Chionaspis citri), a species that is reported to have been the cause of the decay of the old orange trees in Louisiana. The trees and fruit that arrive infested with this scale are always destroyed. I will here state that trees and plants infested with pests not existing in the State are destroyed or deported. If the stock is infested with insects already found in California, it is thoroughly fumigated with hydrocyanic acid gas, unless the insects are of a serious nature and not found in the district to which the stock is destined.

A long scale (Lecanium longialium) belonging to the same family as the "brown apricot scale" (Lecanium armeniacum), and one like the common black scale, but jet black and smooth, came from Australia and the Hawaiian Islands.

A shipment of apples came from Tasmania, via Australia, that were attacked by a small beetle larva that burrowed through the pulp under the skin. Two loads of 4-foot pine wood were piled about the boxes, over all was poured coal oil, and soon we had quite an apple bake. Oranges from the island continent that were attacked by a skin fungus were also disposed of.

THE FLYING FOX.—A pest of a more conspicuous nature came from the same country. This was a flying fox. It measured 14 inches and had a wing spread of 3 feet 2 inches and belonged to the fruit-eating bats. When it arrived it was enjoying a breakfast of ripe pears and bananas. In countries where they exist great expense is incurred in protecting soft fruit from their attacks. They live in great colonies during the day time, suspended from the branches of trees, and at night they sally forth and are known to fly for over twenty miles in quest of fruit. That flying fox and four others that afterward came from China were treated with sufficient chloroform to stop all further desire on their part for such toothsome food as ripe fruit. The owners of course tried to prevent such summary disposal of their bats.

WHAT JAPAN HAS DONE.—Japan, like Australia, has furnished us with several pests that have caused orchardists to expend large sums of money in keeping their trees in a healthy condition. Besides the citrus "snow scale" (Chionaspis citri), a very serious small white armored scale (Diaspis amygdali) is altogether too frequently found upon trees and plants from that country. This is a pest we can take no chances with, owing to the fact that the best-known tree washes of treble strength will only kill 7% of them. Orchardists will understand that very few fruit trees will stand such a strength, and the result of such an application is almost as destructive to the trees as the scale. We have found this scale upon the following trees and plants, which were destroyed. I will give the names of the trees in the order, as to extent, in which we have found them to be infested: Cherry, plum, peach, persimmon, tea bushes and walnut, besides "sago palms" (Cycas revoluta) and a variety of other ornamental plants. The Japanese are experts in the manufacture of artificial cherry blossoms, and to add to the deception they use fresh

cherry twigs, upon which we sometimes find live scale. The only danger, of course, from such imports would be the use of the artificial flowers with decorative plants that could be infested in this way.

From Japan comes a "white wax scale" belonging to the same genus as the "red wax scale" of India and Honolulu. It also is a very general feeder, as we find it on deciduous trees, citrus trees, camillias, and other ornamental stock. From Japan came a long, narrow, dark "thread scale" (*Ischnaspis filiformis*), also a "double scale" (*Aspidiotus duplex*); the latter attacks orange trees and other plants.

Two very near relatives of the so-called "San Jose scale" came from the same country, and it may be that we received the latter scale from Japan in the early seventies, although it is known to exist in Chile.

From the land of the Mikado came cherry trees in pots, the young wood of which was completely covered with bluish-gray flies that produced so much honey dew that the leaves were sticky and coated with black fungus. They were new to the State, so the trees were destroyed.

FROM TAHITI.—The legal fight against the importation of 325,000 orange trees from Tahiti that were landed at San Pedro is well known. The "mining scale" (*Howardia biclavata*) infesting those trees withstood five fumigations with hydrocyanic acid gas, also two treatments by dipping in strong insecticide, and were finally ordered by the Superior Court of Los Angeles county to be burned. It would be impossible to destroy this pest if it ever obtained a foothold in the orchards of this State. We have destroyed trees and plants from southern Mexico that were infested with this scale.

FROM MEXICO.—A San Jose gentleman who has a coffee plantation at Soconusco, Mex., near the border of Guatemala, arrived by steamer in San Francisco and brought a bundle of cuttings of "Cape jasmine" (*Gardenia florida*). Upon examination I found these cuttings to be infested with the "mining scale." He brought them to propagate in San Jose in order to raise more plants, as he was afraid his large bush was going to die. The cause of the plants' sickly condition was pointed out to him and his cuttings were burned.

FROM CEYLON.—A tea grower in Ceylon wrote and forwarded a dry sample of a twig from one of his tea bushes. We found it badly infested with the "mining scale." He reported that half his plantation was attacked by this scale and the yield of tea in that portion was reduced over half. Two club-like structures in the last segment of this scale distinguish it from all other known coccids. Three species of fringed scale (*Asterolecanium*) came from Central America and Honolulu. This scale, when located on the wood, causes a depression and gives the tree a rough, warty appearance.

FROM HAWAII.—A few years ago a very pretty red wax scale was found occasionally on plants from Honolulu, introduced there from India. It must be more numerous about Honolulu now, for we find it on a great variety of plants. The evergreen wreaths with which the Hawaiians decorate their departing friends are also infested, so we never allow such decorations to pass. A lady passenger was detected by a customs officer trying to smuggle a plant ashore under her cape, and, in explanation, she informed me that it was a fern she got on top of the mountains. When I examined the plant I accused her of misinforming me regarding where she obtained it. She inquired how I knew; so I pointed out the red wax scale that is only found near Honolulu. With a blush, she acknowledged it. Her plant was destroyed.

HOW A PLANT PASSED THE INSPECTOR.—I desire to publicly express the indebtedness of the State Board of Horticulture to the United States Custom Service of San Francisco for their valuable assistance in preventing the landing of any trees, plants or fruit from foreign countries. Nothing can now be smuggled in the baggage or taken ashore during the day or night time unless an officer of the Board of Horticulture is present. An amusing incident occurred on board a steamer from the tropics. A member of the crew tried to pass a pineapple and was stopped at the foot of the gangplank by a customs inspector and ordered to take it on board again until it had been examined. He became abusive, said he would take the pineapple ashore and the inspector could not stop him. He returned to the head of the gangplank, peeled the pineapple, ate it and then triumphantly marched ashore.

THE CUCUMBER MAGGOT.—A very serious and disgusting pest was found in cucumbers from Honolulu. This was the maggot of the fly that destroys cucumbers, melons and squash. This pest was introduced into Honolulu some three years ago, and last year it was stated that 75% of such products were destroyed by these maggots. The importers were notified that no such stock would in future be allowed to come into the State. The then Secretary of Agriculture of Hawaii in a letter said: "I have no desire to introduce this or any other pest into California, or see anyone else do so, but believe ordinary inspection at your port by a competent person will be a sufficient safeguard, if all specimens of fruit that show they are infected when they arrive are destroyed. * * * I will state we shall feel satisfied that any of the products are clean before shipment, if for no other reason than the fact that they would not have any

value in the market. We propose to grow these products under glass if necessary to get clean fruit, and you can depend that we will not knowingly send any other. All that we ask is that our shipments have a fair show." In reply I wrote him: "We have no time to microscopically examine every melon, cucumber and squash that may come here from the islands for eggs or newly-hatched larvae, of that pest. I would, therefore, advise you to devote your attention to the cultivation of other products if you desire to market them in California. Statements in your letter are not assuring, and to benefit the island plants we cannot jeopardize our own growers by admitting such products." They must have taken the hint, for no more melons, cucumbers or squash have been received. The same pest was subsequently received from Japan, so I believe the Hawaiians got the pest from them.

THE HOP LOUSE.—The State of Oregon lost over \$300,000 in one year from the damage done their hop crop by the hop louse. Last spring two shipments, numbering 152,000 hop plants, were received from Kent, England. As the hop yards of Kent are known to be infested with the hop louse, we refused to allow the plants to be distributed, so they were deported to a State where they already had the pest.

THE MONGOOSE.—The stoppage and death of a pair of mongooses from India is probably known to most of you. Another one came a few weeks ago from Manila and met the same fate. This animal looks like a large squirrel and is death to all ground game, domestic fowls, and also eats eggs. They are reported "to destroy pigs, kids, lambs, kittens, puppies, rats, snakes, lizards and frogs."

Regarding the destruction of the first pair Dr. Dabrey, the then Assistant Secretary of Agriculture, wrote: "If the mongoose once gains a foothold in California it will probably increase rapidly, and the damage resulting from the destruction of small mammals and insectivorous birds, and the consequent increase of insect pests, will be incalculable."

THE MEXICAN ORANGE WORM.—The morelos or Mexican orange maggot has made its appearance in Acapulco, Mexico. Very few oranges are received from southern Mexican ports, but an invoice of eight cases, equal to sixteen boxes, arrived on the steamship Colon from Acapulco on the 19th of November, and were unloaded the following day. Upon examination we found the fruit to be infested with the above disgusting pest, so we had the fruit and cases cremated. This is one of the fruit flies that in the larva state destroys fresh fruit. This species confines its attacks to the orange. The parent fly deposits her eggs in the pores of the orange peel. When the young maggots hatch they burrow all through the pulp of the fruit and are difficult to detect, as they are nearly of the same color as the pulp and give little, if any, outward indication of their presence. We found from three to fifteen maggots in a single fruit. When full grown they measure about $\frac{1}{2}$ inch; they then leave the fruit and enter the ground, where they change to the chrysalis stage and undergo their change and come forth as perfect flies, ready to spread to other trees and deposit their eggs on the fruit.

In preserving specimens of the maggots for the cabinet we put a number of them into 95% alcohol and were astonished to note their vitality. The first to succumb was after they had been completely submerged for twelve minutes, and at the end of forty-two minutes several still had sufficient life to raise half of their body, as if in an effort to escape. No more oranges will be admitted from there. Such a pest established in California would soon seriously influence the sale and consumption of our oranges.

WHAT FRUIT GROWERS CAN DO.—Before concluding I desire that fruit growers in the various counties petition their supervisors to extend to their County Horticultural Commissioner all the aid they can, and in counties where no commissioners have been appointed to see that good, competent men are immediately selected and appointed to look after importations of trees and plants by rail from east of the Rockies. In so doing you will protect your own property, and the State Board of Horticulture, through its regulations and the State laws, will extend to you its support.

THE DAIRY.

The Transmission of Tuberculosis.

TO THE EDITOR:—In the PACIFIC RURAL PRESS of Dec. 22, under Queries and Replies, there was reference to the infection of dairy products. I give a brief paragraph pertinent to the enquiry and add the facts in reference to the destruction of the tuberculous bacillus in the manufacture of butter and cheese, also in milk. The imminence in spreading tuberculosis is in milk fed to infants and to pigs and calves. The germs of disease require a higher temperature than the active bacilli for their destruction. As butter, or the milk or cream from which it is made, is not subjected to a temperature at all destructive to microbes, it may be infectious, as also, indeed, cheese. So that if there are tuberculous bacilli in milk or

cream from which a product is made, and which has not been subjected to a temperature much short of 200° Fahr., the product is doubtless infected. Even in meat, boiled or roasted in large pieces, have been found tuberculous bacilli in an active condition, in the center of the meat, so that cultures of these have been made, swarming with life. Of ptomaines—or poisons produced by pathogenic disease, producing bacteria—I need not write until I write on the sterilization of milk as a possible poison, at a later period, if of interest to your numerous readers.

As New York State produces one-eighth of the dairy products of the United States, which is the second great industry of the country—being worth, with the hay consumed, about \$500,000,000 annually—tuberculosis is a serious menace to human health, from diseased herds and products. A legislative committee ignorantly recommends that diseased or tuberculous animals should be used for breeding. This plan will reverse every principle of judicious breeding. It is going from bad to worse, instead of from good to better, which is the only wise method of successful breeding. It utterly ignores the theory of the survival of the fittest.

According to the most advanced views of tuberculosis this disease is not hereditary. But the consumptive tendency is as transmissible as that of cancer or contagious pleuro-pneumonia. And it is certainly admitted by modern pathologists that tuberculosis is infectious, for a diseased cow in a herd soon spreads the malady. In this way the disease is transmitted through contact, and through the secretions and excretions.

Is it probable that healthy offspring will come from diseased parents? Will not parents having a contagious disease transmit an enfeebled condition to offspring? It is well known that weaklings are especially liable to take on disease, and, on the contrary, that animals and persons of robust health ward off disease.

A. S. HEATH, M. D.
New York City.

Forage Crops Other Than Grasses.

Much of the accurate knowledge which is available of the summer growth of forage crops in the eastern parts of the arid region is valuable and suggestive for the interior valleys of California. Some of their summer crops we can grow in the winter; others are only available for our summer heat and drouth. Certainly to know about them is important. A book containing this knowledge by Prof. Thomas Shaw of Minnesota has just been published by the Orange Judd Co. and can be furnished by the PACIFIC RURAL PRESS for \$1 per copy.

Under the term "Forage Crops," as used by the author, are comprised all pasture plants which are sown from year to year, and which are fed off by animals in the field. How easily and satisfactorily forage plants can be made to supplement perennial pastures, how profitably they can be raised on land which otherwise would be idle, and how important a place they are destined to occupy in the near future in systematic crop rotation on every stock and dairy farm, has been the author's aim in writing this book.

The initial chapter is devoted to forage crops in general, while the succeeding ones treat on the special kinds of crops: Indian corn, sorghums, clovers, leguminous plants other than clover, plants of the Brassica genus, the common cereals, millets, field roots, etc. In discussing the various plants the author dwells upon their distribution, the soils to which they are adapted, the rotation in which they should be grown, the preparation of the land, the time for sowing them and the methods of doing the same, the modes of cultivation and of pasturing them when grown.

Of course, much that is said about times for sowing, etc., has to be translated into California practice, but the intelligent reader will not have much difficulty in doing this.

Last Stages of Tuberculosis.

TO THE EDITOR:—What is the condition of a tuberculous cow in the last or dying stage? Will she swell about the head and shoulders? Or is there any swelling at all in consumption?—W. E. ADER, Campbells.

There is a short, deep, spell-like cough, becoming painful in the last stage. It is especially heard in the morning—may be produced by making the animal rise and compelling her to walk or making her drink. Ordinarily it is a dry cough; there is rarely any discharge. Breathing is accelerated and is difficult when the lung destruction is far advanced; it is wheezing. In the act of inspiration the ribs become lifted to excess and the nostrils become dilated. She will not swell about the head and shoulders.

510 Golden Gate Ave., S. F. DR. CREELY.

SPEAKING of the popularity of American agricultural machinery in Russia, the British Consul-General at Odessa says: "In reapers and binders America still enjoys the monopoly of this market. Hand reapers still command a ready sale, though they are gradually being superseded by self-reapers and binders."

Agricultural Review.

ALAMEDA.

POULTRY FANCIERS.—Oakland, Enquirer, Jan. 5: The annual meeting of the Oakland Poultry Association was held last night to close the affairs of the last poultry show and elect officers for the ensuing year. The next show, it was decided, shall be on the 5th, 6th, 7th and 8th of next December, and some prominent Eastern judge will be secured to work in connection with the local judges. The officers elected were: President, F. E. Mason; vice-president, F. A. Roswell; secretary, C. G. Hinds; treasurer, L. N. Cobbledick; directors, T. B. Keyes and O. P. Hayes.

TREE PLANTING.—Haywards Journal, Jan. 6: Chas. Underhill is setting out 4000 fruit trees for the Meek estate. The trees will be planted 24 feet apart. Currants and rhubarb will be planted between the trees, which will return an income sufficient to repay the cost of cultivation and bringing the orchard into bearing.

BUTTE.

NOT MUCH GRAIN SOWN.—Oroville Register, Jan. 4: Marion Biggs Jr. said of the adobe lands that he did not believe any change in the weather would make any difference so far as planting grain was concerned. The ground had run together to such an extent that it would have to be plowed again ere the grain could be sown. He believes that in the spring, when the weather is suitable, stock would be turned on the land or the grass would be cut and the land plowed and next fall seeded to grain. He did not think that over 20% of the adobe lands had been seeded.

COLUSA.

BIG LINE BREAK.—Colusa, Jan. 4: A big break occurred in the levee near Princeton, eight miles north of this city, to-day. A gap about 150 feet wide was cut through, and the water from the river poured out in great volume. It means a loss of many thousands of dollars to farmers in the tule basin on the west side of the river. It is expected that the flood will cover all of the low land in the tule from Grand Island to Knight's Landing, west of Colusa.

FRESNO.

ORANGE CROP.—Sanger Herald, Dec. 30: The King's river orange crop this season was fully one-third more than last season. Seventy-one carloads, averaging 362 boxes, were forwarded to Eastern points, the prices ranging from \$1.20 to \$1.65 per box for Seedlings and \$1.65 to \$2.50 for Navels, f. o. b. A conservative estimate of the value of this year's crop to the producers is \$40,000, which shows that the citrus fruit industry bids fair to rival the raisin industry as a profitable investment for capital in this county.

KERN.

EXPORTING PRUNES.—Bakersfield Echo, Jan. 4: The first shipment of Bakersfield prunes to Germany direct was made by B. F. Brooks & Co., and the amount of the shipment was 35,000 pounds.

KINGS.

OFFICERS ELECTED.—Hanford Sentinel, Jan. 4: The board of directors of the Lakeside Ditch Co. met to-day and organized by electing Robert Dougherty president; Fred Howard, vice-president; J. G. Covert, secretary; and the Farmers' and Merchants' Bank, treasurer.

VINEYARD COMPANY INCORPORATED.—The Kings County Wino Vineyard Co. has been incorporated with a capital stock of \$100,000. The directors of the company are L. S. Chittenden, W. A. Crawford, J. O. Hickman, H. T. Hondricks and Wm. Abbott of Hanford, and L. F. Montague of San Francisco. It is the purpose of this company to plant 240 acres adjoining the Lucerne vineyard to wine grapes. This is the first attempt to grow wine grapes on a large scale in this county.

LOS ANGELES.

MUTUAL FIRE INSURANCE.—Pomona Times, Dec. 27: Secretary G. F. Cromer says he has already written up \$120,000 in-

surance in the Los Angeles County Mutual Fire Insurance Co.

OLIVE PICKLING.—Capt. A. D. Thatcher started in to pickle about 500 gallons of olives and will soon close for the season after raising the amount to 1500 gallons.

ROSE CARNIVAL.—Dispatch from Pasadena, Jan. 1: Pasadena's annual floral festival, the tournament of roses, was held to-day and witnessed by 15,000 people. It was in many respects the most successful parade given in the past ten years of the association's history, though some tournaments have called forth more entries. The parade was a mile long. Never before has the weather and supply of flowers been better.

EXPERIENCE WITH OLIVES.—Pasadena Star, Jan. 3: J. A. Brown of San Jacinto believes that olive culture in southern California is progressing. Only a few places will support olive trees without irrigation. The trees will stand neglect, but respond readily to good treatment. Oil manufacturers will succeed if well conducted in business methods. Pomona growers were discouraged by the low market prices at that city, which was only 50% of the sum received in San Diego county. Olives at \$35 per ton equals \$1 per gallon of oil. The hot winds are inimical to the olive. The Mission olive had proved satisfactory to Mr. Brown. His orchard averaged \$84 per acre for three years. The market question is the most perplexing to the grower. Mr. Brown advised co-operative marketing, finding from experience that the individual efforts to place olives on the Eastern markets were largely fruitless. He expects to see a co-operative oil press in his vicinity. There is damage to the grower from imported and inferior products sold as Californian. He suggests an analytical test as a solution of that difficulty.

SUCCESSFUL CREAMERY.—Los Angeles Cultivator, Jan. 4: The Downey Co-operative Creamery was organized four years ago with a capital of \$3000. It has 115 patrons, who milk 650 to 700 cows. The milk is tested twice a month. Patrons are paid on the 10th of each month, returns being based on the amount received for the finished product, the creamery first deducting a sufficient amount to pay running expenses and interest between running expenses and interest on the investment. The balance is distributed among the patrons. Following are the prices paid for 4% milk for the year ending December 1, 1899: December, 1898, \$1.28; January, 1899, \$1.24; February, \$1.36; March, \$1.10; April, 85c; May, 85c; June, 90c; July, \$1.05; August, \$1.12; September, \$1.16; October, \$1.28; November, \$1.28. Average, twelve months, \$1.12. In 1896 the daily receipts were 2000 pounds; 1897 showed a considerable increase, while 1898 doubled the preceding year; 1899 has been 40% greater than 1898 and to-day their average is 10,000 pounds per day. The officers are: John Bartlett, Pres.; T. E. Hass, Vice-Pres.; Clinton Blythe, Treas.; E. Jarvis, Sec., and R. S. Mayes, Director.

MONTEREY.

SHIPPING BARLEY.—Salinas Index, Jan. 4: For the first time in the history not only of Salinas but of Monterey county barley will be sent to New Orleans for shipment to Europe. From Salinas some 1100 tons will be shipped, and from other points in the county about as much more.

DECISION RENDERED.—Dispatch from Monterey: The Secretary of the Interior has rendered a decision regarding a large tract of land near Carmel, ten miles from Monterey, settling the long-disputed question of its ownership, unless the United States Supreme Court should reverse the decision. The land was claimed by David Jacks, a large land owner, under the Conness Act. It was settled upon by other persons, who claimed it was Government land. The Secretary of the Interior has decided in their favor. The successful claimants are K. M. Henneken, D. Belard, Joseph Alves, J. C. Pinheiro and Manuel Mattos.

RANCHES FLOODED.—Monterey, Jan. 6: The report comes that the country round the mouth of the Salinas river for several miles is inundated, causing much damage to farmers in that locality. The Cooper and Moro Colo ranches are from 5 to 6 feet under water. Boats have rescued the inhabitants from their uncomfortable positions. No loss of life is reported. A thousand acres of beets in this section have probably been ruined by the flood, and if this proves the case it means a loss of about \$15,000 to the ranchers. The beet growers hope the ground will dry before the beets rot. Reports from all along the river state a rapid fall of water since the rain stopped.

RIVERSIDE.

RECORD-BREAKING ORANGE SHIPMENTS.—Riverside Press, Jan. 6: During November and December 241,078 boxes of

oranges and 24,000 boxes of lemons were shipped from Riverside, making a total of 265,078 boxes. Last season the orange shipments to January were 145,667 boxes, and two years ago the total was 212,117 boxes (including oranges and lemons). We have therefore shipped over 50,000 more boxes than we had in the record-breaking season of 1897-'98.

BIG WATER DEAL.—Riverside Press, Dec. 30: Probably the largest real estate and water deal ever made in Riverside county was consummated this week. Daniel Durkee made the final transfer of a 14,000-acre ranch at Crary to the Santa Ana Valley Irrigation Company and the Anaheim Union Water Company, the consideration being \$100,000 cash. The purchasers will immediately spend \$50,000 in developing water to be used in Orange county. The ranch has about 1000 inches of water, which will be turned into the purchasers' canals.

SACRAMENTO.

FRUIT GROWERS' REPORT.—Sacramento Bee, Jan. 5: The report of the manager of the Florin Fruit Growers' Association shows that during the season 90 cars of deciduous fruits were shipped by the Association, and 20 cars of strawberries, while 70 cars of deciduous fruit and 10 cars of strawberries were forwarded by shippers outside of the Association. It appears that on Florin Tokays 70 to 80 cents per half-crate have been received, the net profit being placed at from 30 to 40 cents, or \$50 per acre. This profit is greater than at any preceding season. Owing to a slim attendance at the meeting, it was decided to postpone the proposition to amend the by-laws until Tuesday next at 1 P. M. Directors were elected as follows: Charles L. Buel, W. O. Davies, David Reese, John L. Schofield and Russell Howell.

SANTA BARBARA.

RARE WINTER SEEDLING.—Lompoc Record, Jan. 6: A. H. Dyer has a rare winter seedling apple that has matured and fruited on his farm. The apple is evidently a sport of the White Winter Pearmain, and in some respects resembles the Capp Seedling, another sport of the Pearmain. The new variety is sub-acid in flavor, and, to our taste, a trifle superior to the Capp Seedling; and, if its bearing qualities prove satisfactory, will be a valuable addition to the varieties to be in demand for export. No apple has been better received by shippers than the Capp Seedling, and this new variety is in every way its equal.

SANTA CLARA.

BIG SALE OF PRUNES.—San Jose Mercury, Dec. 30: After a long and spirited season on figuring between J. H. Henry, representing the Mineral King Fruit Co., and C. A. Hall of J. B. Indereidson & Co. of Chicago, a sale of 500 tons of prunes, the entire product of the company, has been finally consummated. The orchard of the Mineral King Co. is situated near Visalia, and the price obtained insures the stockholders of the company a nice dividend. The stockholders are W. B. Hobson (president), Dr. Flemming, W. L. Woodrow, John P. Burke, Mrs. Whipple and J. H. Henry, all residents of San Jose. This is the biggest deal ever made in prunes except when the same Chicago firm bought 100 cars from the Exchange one year ago.

LOCAL LEMONS IN MARKET.—Pacific Tree and Vine, Jan. 6: The larger part of the lemons sold in San Jose and surrounding towns at this time are of local production. Home Union is selling from the grove on the Wm. Cox place, near Saratoga. The branch at West Side is selling the crop of John P. Bubb's orchard. Los Gatos grows more lemons than sufficient for local use. H. L. Stevens and D. B. Fuller of Evergreen are furnishing San Jose stores. Wm. Cameron, in the foothills east of Milpitas, has very fine Navel oranges which ripen earlier than most others in this section. Henry Curtner, at his home place near Warm Springs, has quite a surplus of lemons for the local trade. The place of the late John B. Carey, east side, has one or two fine lemon trees which give an income of about \$25 annually.

SANTA CRUZ.

BEET CROP.—Watsonville Pajaronian: Over 42,000 tons of beets have been weighed in from Pajaro valley this season. Thousands of tons have been shipped from switches on the narrow and broad gauge railroads, and the complete crop of Pajaro valley's beet fields will be the heaviest ever produced. The crop will realize \$300,000.

SONOMA.

CITRUS FAIR.—Cloverdale Reveille, Jan. 6: The board of directors of the citrus fair have announced that it will be opened on February 20th and will close on the 23rd. The outlook is propitious. Everybody is interested; the orange crop is the best yet had, both in the quantity,



size and flavor of fruit. The following committees were appointed: Excursion—W. D. Sink and C. E. Aumbert; printing—G. Cameron and R. E. Baer.

FRUIT GROWERS' MEETING.—Santa Rosa Press-Democrat, Jan. 7: One of the most enthusiastic gatherings of fruit growers ever held in this county took place on Saturday afternoon at Horticultural hall. The meeting was called to order by Jonathan Roberts, explaining its object. Mr. Roberts was chosen chairman. Herbert Slater was chosen secretary and Will Woolsey assistant secretary. A canvass was made of the growers present to ascertain the acreage represented. This resulted in a pledge of 852 acres of prunes to the Association if organized. This does not include the acreage of other deciduous fruits, as it was understood the prune will be the central aim first, but the Association will include all deciduous fruits. It is expected the following will attend the San Jose convention from Sonoma county: S. T. Coulter, Hubert Bryant, W. E. Woolsey, G. W. Rodolph, Walter Armstrong and Jonathan Roberts.

SOLANO.

MUST RE-PLOW SUMMER-FALLOW.—Dixon Tribune, Jan. 5: The farmers near Suisun are scared on account of continual wet weather. Many of them will have to plow their summer-fallow over as they have been unable to cultivate it.

TULARE.

SEEDING BEING RUSHED.—Visalia Times, Jan. 4: Farmers are rushing with every available team to get seeding done. The land is in splendid condition. The early-sown grain is doing fine, but late-sown is not doing well for the past ten days—not sunshine enough.

ARIZONA.

ORANGE INDUSTRY.—L. A. Herald, Jan. 6: The orange industry this year has been a success. The last two years have demonstrated that there is money in growing oranges in the Salt River valley. It is estimated that growers netted more than \$200 per acre this season. One ten-acre ranch netted \$2600. The volume shipped shows an increase of 50% over the production of last year. In carloads the crop numbered about thirty, of which twenty-five were Navels.

OREGON.

BOARD OF AGRICULTURE.—Pacific Rural Spirit: At the annual meeting of the State Board of Agriculture the following officers were elected for the ensuing year: President, W. H. Wohrning of Hillsboro; vice-president, J. H. Settlemier of Woodburn; secretary, M. D. Wisdom of Portland; treasurer, A. Bush of Salem.

WASHINGTON.

HOLDING WHEAT.—Seattle Times, Dec. 24: Official figures of the Northern Pacific Railway show that this line has hauled nearly 3,000,000 bushels less wheat up to the present time than was hauled last year. Most of the product is being stored in warehouses, and the amount disposed of in this manner exceeds that of any previous year. Officials say that there is not a warehouse along the line of the road that is not filled to overflowing, and so far the road has hauled almost entirely from stations where the grain was conveyed directly into the cars from the growers' wagons.

One of the Finest Catalogues Ever Published.

One of the most valuable seed catalogues ever issued from any house in the United States is just now being distributed among the friends and patrons of the great seed house of the Cox Seed Company of 411-413-415 Sansome street of this city. These people are among the largest growers and handlers of the best seeds and plants in the West, and growers on the coast are giving them the preference in orders over the Eastern seedsmen. A copy of the new catalogue will be mailed free to any address on receipt of request, addressed to the company's headquarters in San Francisco.

Horse Owners! Use
GOMBAULT'S
Caustic Balsam
A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

A Wild Rose.

One lone bush by the roadside,
Half hidden by plants that grow
Not far from a winding creeklet,
With its ceaseless, silent flow;

Down in a waste place growing,
No pruning hand to train,
Kissed by the sun's friendly rays,
Nourished by gentle rain;

Opening buds changing to blossoms,
Lending their sweetness to aid
In making a garden of beauty
This world that God has made.

Are we as quiet and faithful—
We who have spirits that live—
As the soulless, blossoming rosebush?
Our best do we as freely give?
—M. R. Miller.

What will it matter in a little while
That for a day
We met and gave a word, a touch, a
smile,
Upon the way?

What will it matter whether hearts were
brave
And lives were true,
That you gave me the sympathy I crave,
As I gave you?

These trifles! Can it be they make or
mar
A human life?
Are souls as lightly waved as rushes are
By love or strife?

Yea, yea! a look the fainting heart may
break
Or make it whole;
And just one word, if said for love's
sweet sake,
May save a soul.

"Bones," Non-Combatant.

Naturally enough, we were all down on the non-combatants. It is always so in the fighting lines. The teamster enlists as a teamster, and it is a very useful and necessary adjunct of an army, but yet, when the fight is on, and you think of his being safe in the rear, there is a feeling against him. So with the hospital staff and others. We had other reasons for being down on "Bones," however. In addition to being out of the row, he was the man who examined us at sick call half the time, or when the regimental surgeon had an excuse for being absent. There is a programme about "sick call," and it was only one variation when the hospital steward is the man you run out your tongue at. When the bugles sound the call, the ailing form in line and march up to be examined. So do the shirkers. There are generally three shirkers to one sick man. There is a widespread idea that neither the regimental surgeon nor the hospital steward is on to this fact, but that is one of the first things they discover. When we came up before "Bones" the programme was:

"Sick, eh?"
"Yes, sir."
"What's the matter?"
"Had a fever all night, and was out of my head."

"Run out your tongue."
"Yes, sir."
"Take three of these."

The looks of the tongue settled it. About one in six was excused from duty for the day, the rest were pronounced fit for drill and work. It was because we couldn't beat "Bones" that we called him "Bones." It was because he saw through our little game that we would have made his daily life miserable if we had known how. It was because the regulations of war put "Bones" to the rear when a fight was on that we hoped a stray bullet would search him out some day. In time "Bones" came to realize that he had no friends in the rank and file of the 17th, but I must do him the justice to add that it made no difference with him. He neither prescribed more nor less physic—neither excused more nor less men from duty. He went right along doing his duty by the United States, and looking serious and conscientious

over it, and this was another cause for complaint on our part.

By and by, when we all were hating "Bones" with all our heart, and things had grown so bad that the sight of him set men to yelling, we marched away to outflank Jackson, as he had outflanked Pope at Manassas. It was sharp fighting along the front from the start, and after a hard march of two days, our corps went into battle line one morning and we knew that there was a host of the enemy in our front. A brigade was detached to reconnoitre the woods to our left, and later on our regiment was detached to deploy as skirmishers and draw out the concealed strength of the enemy. Away we went with a yell, glad to be in it at last, and it wasn't five minutes before men began to fall. We pushed up to the woods, drove the gray skirmishers back, and then massed on the center to hold a gap between the hills. Troops were moving up to support us and hold the ground we had gained, when the enemy came swarming out. Then for ten minutes the old 17th made its war record. We held a full brigade. We did even better than that—we repulsed three determined assaults by four times our number, and we killed and wounded almost as many men as we had in the ranks.

But there was a blunder somewhere. Our supports fell back, the enemy was reinforced, and we were left there to be sacrificed. There was no panic—no retreat. It was simply that the lone regiment, realizing that it had been abandoned, broke up into detachments and fought almost without leaders and each man for himself. Again a whole brigade moved up against us, and, though we were only seven hundred now, we poured in such a cool and deadly fire that the advance wavered—halted—broke back and left us to wave our caps and cheer. We might have retreated then, but no one gave the word. In five minutes it was too late. A regiment to an army is as a fly to a horse. Our resistance simply annoyed. We saw a force gathering in the edge of the woods beyond, and every man felt that it was the end. Those battle lines would walk right over us next time. We looked back to the Federal lines, but no reinforcements were on their way. If we rose up to retreat we should be swept by the grape and canister of the guns in battery and waiting.

"It's our last fight," called man to man, as we hugged closer to the earth and drew a long breath.

In front of us lay our regimental flag, with half a dozen dead men beside it, and colonel, major, and half the company captains were down, dead or wounded. The gray lines had just begun to move when a shout of "Bones! Bones!" rang along our lines. It was the hospital steward, sure enough. Of all the thousands of Federal soldiers in our rear he alone had made his way across the fields to die with us. He had lost his cap on the way, but men knew him by his eyeglasses and long hair and hatchet face. He came on the run, and without pause he sprang over the forms lying down—over the gun-barrels pointed in the front, and, lifting up the flag, he waved it and shouted:

"Men of the 17th, follow me!"
I have seen a dozen generals leading brigades or divisions into action, but I never saw one who grew tall and heroic as rapidly as "Bones." One minute he was a hatless, bow-backed hospital steward. The next he was a hero, seeming to be six feet tall and as straight as an arrow. We just got one look at him, and then the seven hundred men sprang up with yells and cheers and followed his lead. He turned to the left, led us straight at three guns posted there, and in the dash of forty yards we were among them and had wiped out the artillerymen. Then it was down the hill on the other side, the men dragging the captured guns along—through the skirmish lines creeping up—around the corner of a grove, and then the Federal ranks opened with cheers to let us through. There was "Bones" still at the head—still acting as colonel, flag-bearer, and saviour, and what do you think he did and said as General Devins rode up and took

the flag from his grasp and called him the hero of the Army of the Potomac? He sat down for a minute to catch his breath and wipe his glasses, and then rose up to reply:

"Why, general, I saw that the boys needed some one, and so I went down!"

They would have made "Bones" a captain for what he did that day, but he would have none of it. He remained a hospital steward to the end of the war, but he was "Bones" no more to the 17th. His name was Drew, and we called him Colonel Drew after that day, and the man who didn't get a chance to shake hands with him at least once every twenty-four hours felt that things were some out of kilter. In that perilous moment in the gap there was a chance for every one of us to become a hero, but it was "Bones" who rose up—"Bones," the non-combatant of the hospital staff.—M. Quad.

Care of the Sewing Machine.

As a rule a sewing machine used by a family is neglected. Most women seem to expect it to be always ready, whatever care is given, and if it fails to come up to expectations the fault is attributed to the machine without hesitation. When found with dressmakers and tailors we believe the sewing machine receives more attention and better care, though here it is not always given proper care.

In one instance a dressmaker using but one machine and employing two girls as assistants oils her machine but once a week, and never unbands it. It is needless to add that a new sewing machine in her hands is worn out in a very short time.

Directions for use and care accompany each machine purchased, but there are a few general directions which may apply to any and all machines.

For every ten hours' use the sewing machine should be oiled thoroughly and all surplus oil cleaned away. The machine, when not in use, should be unbanded and the foot lifted from the feed. It should be run steadily, never started or stopped with a jerk.

Care should be used in regard to the breaking of needles. One dealer claims that nothing contributes so readily to throw a machine out of order as this. Anything that may give the machine a shock should be avoided. Should poor oil be used, and the works become gummed in consequence, a thorough oiling with kerosene occasionally, and afterwards wiped clean and oiled with the best of sperm oil, will be found very effective and save many dollars.

Any woman of ordinary intelligence may learn to clean her sewing machine and keep it in good running order. She should learn it thoroughly and understand the use of the attachments. She should know how to lengthen and shorten the stitch, loosen and tighten the tension, both upper and lower, adjust the feed and presser foot, and every other part of the machine that will require attention.

A LITTLE BOY declared that he loved his mother "with all his strength." He was asked to explain what he meant by "with all his strength." He said: "Well, I'll tell you. You see, we live on the fourth floor of this tenement, and there's no elevator, and the coal is kept down in the basement. Mother is dreadfully busy all the time, and she isn't very strong. So I see to it that the coal hod is never empty. I lug the coal up four flights of stairs all by myself, and it's a pretty big hod. It takes all my strength to get it up there. Now, isn't that loving my mother with all my strength?"

Ancient of Days, August Athena,
Where are thy men of might—
Thy grand in soul?
Gone glimmering through
The Dream of Things that were.

So nigh is grandeur to our dust,
So near is God to man,
When Duty whispers low, "Thou must,"
The youth replies, "I can."

—Emerson.

An Adventure in the Black Hills.

Late one afternoon in the fall of '88, John Hamilton and two companions, Ralph Dunbar, a native of Vermont, and Charles Dupont, a Westerner, were making their way back to their camp in the Black Hills of South Dakota. They had been taking a geological survey of the southern part of that Territory, and intended to work as long as possible that day in order that on the morrow that they might possibly move camp.

"Well, boys, we had better look this ledge over before we go any farther," said Hamilton, as they all stopped on the brink of a precipice about seventy-five feet in height.

"All right," responded Dunbar, loosing a coil of rope from his shoulder, preparatory to the descent. "I believe it is your turn, though."

"Yes, it is," returned Hamilton, "and it is odd, but I always dread the first moment when I am dependent on the rope. Well, come on!" And picking up a revolver and hammer he stuck them in his belt, tied the rope about his shoulders, slid over the precipice and was gone, with the only communication between him and his comrades a cord tied about the wrist of the former.

The rock rose almost perpendicularly from the base. At the front of the ledge a narrow shelf, not more than two feet in width, extended along the mountain. From this there was a perpendicular descent for about three feet,

The Best Food for Infants

Nature planned that infants should have only milk for at least the first year of life. But thin milk, skimmed milk, will not nourish. It's the milk that is rich in cream, or fat, that does the work. This is because fat is positively necessary for the growing body.

Scott's Emulsion

contains the best fat, in the form of Cod-Liver Oil, for all delicate children.

They thrive greatly under its use. Soon they weigh more, eat more, play better and look better. It's just the right addition to their regular food. The hypophosphites of lime and soda in it are necessary to the growth and formation of bone and teeth.

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Open All Year. : A. VAN DER NAILLEN, Pres't.
Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25; Blowpipe Assay, \$10. Full course of assaying, \$50. Established 1864. Send for Circular.

The BEST PLOW on Earth at any Price.
Double Board Hardened Steel Plow, 16 in. wide, \$11.
Guaranteed to scour or money refunded. We have cheaper 16 in. Plows at \$9.50. Send for Big free Catalogue of Sulky, Gangs, Disc, Wagons, etc. Write now and get ready for Spring work. **HARVEY PLOW CO., Box 584, Alton, Ill.** Only Plow Factory in the United States selling direct to farmer.

WATCH AND CHAIN FOR ONE DAY'S WORK.

Boys and Girls can get a Nickel-Plated Watch, also a Chain and Charm for selling 1/10 doz. Packages of Blaine at 10 cents each. Send your full address by return mail and we will forward the Blaine, post-paid, and a large Premium List. No money required.
BLAINE CO., Box 200, Concord Junction, Mass.

The McCormick
"The Best in the World."

and then the slope was gradual for quite a distance.

Hamilton slowly descended to this place, stopping only once, about fifty feet above, to get a specimen of the rock forming the ledge. As he stopped here to reconnoiter, he was pleasantly surprised to see a grizzly lumbering along in the woods below. Waiting until he was near enough to make, as he supposed, his aim sure, he fired at the head of bruin. Hamilton had never boasted of his marksmanship and, in fact, had nothing to feel remarkably proud over, but this time he was absolutely ashamed. The shot, instead of hitting the desired spot, wounded him in the shoulder. The bear was not seriously injured, but he was decidedly maddened. Uttering several savage grunts he endeavored to discover the source of his hurt. Hamilton, when he saw the result of his first shot, calmly awaited the bear, intending to give the signal to ascend as soon as the grizzly should approach. The bear, on seeing his antagonist, started towards him.

Hamilton gave the intended signal, but no response. In surprise he again tugged at the string but with no more effect, and looking up discovered it tangled in a bush about half way up the ledge. By this time bruin was at one end of the shelf of rock and he was at the other. Raising the revolver in line with the bear's head he again fired—or rather attempted to fire, but the hammer, for some unknown reason, refused to fall. At this point bruin, as though to show his disgust toward the act, clambered upon the rock. As he mounted, Hamilton gave the last tug at the cord, but only with the same result. Just then the rock on which he stood seemed to tremble under the weight of both. The bear stopped and then again started forward.

As he did so the whole shelf fell from its position, carrying the grizzly and a mass of stones and dirt with it down the mountain. Over and over they rolled, first the bear at the top and then at the bottom.

Finally they stuck a huge tree and bruin stopped with a rock of at least a ton on his hind legs. He was still alive as evinced by his deep and loud growls, though held as much a prisoner as any criminal. As the rock gave way, Hamilton was merely thrown a short distance and against the ledge. The shock unloosened the cord so that he was able to give the signal to ascend.

Finding a leaf caught underneath the hammer of the revolver to be the reason of its uselessness, he had it soon repaired and one shot, fired at closer quarters, finished the bear. Then completing his geological observations, he returned to his friends none the worse for his adventure.

Uses of Old Flannel.

The wise woman never throws away pieces of woolen cloth, and never consigns a bit of flannel that will match in size her own palm, to the rag-bag. Each piece is carefully washed—not pressed, for there are uses for which this tends to unfit them—and laid away where she can find it at once when the need arises.

Some of the finer and smaller pieces she bastes into the waists of her own and the children's dresses, taking care that they are very smooth and do not run far toward the waist, for one of the first places where cold is felt is between the shoulders, and nowhere is it more harmful. If the good man's flannels have reached their second winter, a temporary shoulder lining of this sort may add much to his comfort. The breadths of flannel her piece-bag holds she utilizes as a second thickness in front of half-worn petticoats, or even bastes into the new ones, if the wearer is specially sensitive to cold, for another vulnerable place is the knee. If there are aged people or invalids in the family she keeps the remnants of her partly worn blankets to wrap around chilly or aching limbs in bed.

A little invalid, who complained much of aching knees during a tedious fever, was relieved by bandages of flannel applied thickly around the knees and al-

lowed to remain there. Blankets that are still whole, but too thin for wear, may be laid away for use in sickness. They are just the thing to wrap a sick person in to prevent the chill of the sheets when he is put in bed, or on a very cold night. The smallest pieces may be put to uses innumerable. After the application of a poultice the surface will be so sensitive to cold, and at the same time so tender, that nothing is safer or more soothing than a square of soft flannel, to which camphorated oil has been applied. And after the oil is no longer needed, another bit of flannel may avert a new cold. Other bits, which are all the better if they are coarse even to roughness, will be found to be of use in neuralgic attacks. Heat very hot and rub the aching part briskly. A bit of hot flannel, sprinkled thickly with cayenne pepper, will often give relief in cases of throat or bronchial irritation, and gives an excellent counter irritant sufficient for many mild cases.

A Bit of Wedding Cake.

"But what shall I do with it?" he asked, helplessly.

She looked up at him and laughed as he stood dangling the square, white box by its satin ribbon.

"There's a certain inanity in treasuring another fellow's wedding cake. Won't you take it—as a gift?"

"Thanks, no," she answered. "I have a sufficiency; besides, the charm is broken if you give it away."

"Charm?" he echoed. "What charm has an infinitesimal piece of cake that would not stay the appetite of a mosquito? Silly custom this, anyhow, of—"

"Do you mean to say," she interrupted, solemnly, "that you have attained unto years of discretion and have never tried the charm that lies in a bride's cake?"

"Never!" he averred.

She looked so bewitching in her bride-maid array that he would have sworn to any fact or fallacy whatsoever could he thereby prolong the tete-a-tete. In seeking a spot where perchance that ubiquitous best man might be eluded he had found this curtained corner of the porch.

"Then you must try it before you are a night older," she said, with a pretty air of authority. "Cut a card into seven slips and give me a pencil, and I'll do the rest."

He obeyed with unwonted docility.

"This is merely a short and sure way to find out whom you are to marry," she resumed.

"I know whom I want to marry. I don't need a piece of cake and seven slips of paper to tell me that."

"Whom one wants to marry and whom one marries are not always the same individual!" she replied sententiously.

"O!" was his own audible remark.

"Now," she went on, "I shall write a name on each of these six pieces and leave one blank—for bachelorhood, you know."

"Um!" he assented.

"Then you will place them under your pillow, with the wedding cake, and draw out one each morning; the last one—" with a pause of emphasis.

"I understand," he broke in. "The last shall be first. But I can't think of six names; one is so indelibly written on my heart that—"

"O, I can arrange that!" she interrupted blithely. "You know they must be written by some one else, anyway—some disinterested person."

"O!"—humbly.

But as he watched her brows wrinkle in such perplexity he concluded that it was not such a bad thing after all this idea of tying up wedding cake in boxes, and he became convinced that weddings, on the whole, were not such a bore when he saw the ubiquitous best man peer into the half-light of the veranda and retire precipitately.

"There's one thing I forgot," she was saying; "each slip must be destroyed as it is drawn out, and only the last one read."

"Humph! Strict requirements these! It would give a fellow some satisfac-

tion, perhaps, to know whom he had escaped."

"O, but the charm won't work unless you do! Promise, now!"—imperatively.

And he promised. Then—

"O, I say," he cried, interrupting the writing again. "You'll put your own name down, won't you?"

"Shall I?" she queried doubtfully.

"Well, rather." And though the light was dim, she saw something in his eyes that made her add hastily:

"O, well, since it is by request."

On the eighth day thereafter she received the following telegram:

"Your name seventh. Has charm worked?"

And it was not till their honeymoon was at its zenith that she told him—confidentially—that each bit of cardboard had borne the same name, and there had been no blank.

DOMESTIC ECONOMY.

Hints to Housekeepers.

GRAPE SHERBET.—Mix together a quart of grape juice, two cupfuls of orange juice and two cupfuls of sugar. When the sugar is thoroughly dissolved turn into a freezer and freeze. When half frozen take out the dasher and add the beaten whites of two eggs.

ENGLISH PLUM PUDDING.—One pound of suet chopped very fine, one pound of flour, one pound of bread crumbs, one pound of sugar, two pounds of raisins, stoned and chopped, two pounds of currants, picked, washed and dried, one pound of figs, chopped fine, one-half pound of mixed citron and orange peel, sliced fine, one ounce of mixed spice, three tablespoonfuls of molasses, four beaten eggs, a tablespoonful of salt, one pint of brandy; mix all together with about a quart of milk, place in a pudding bag and boil in water for seven or eight hours. Boil steadily to prevent the pudding from absorbing the water.

PLAIN LOAF CAKE.—To a pint of bread sponge add half a cupful of butter, a cupful of sugar, two eggs and flour to make a soft dough. If desired add also a teaspoonful of mixed spices, cinnamon, cloves and allspice, and a cupful of floured raisins or half raisins and half currants. Cream the butter and sugar, add the eggs, spices and gradually the sponge. Mix well, stir in the flour and the fruit. Beat the batter until smooth and make it rather stiffer than ordinary cake dough. Pour into a well-buttered cake form, let it rise until doubled in bulk, then bake in a moderate oven. When done, dust with powdered sugar.

CHOCOLATE SOUFFLE.—Scald one cupful of milk; add two squares of grated chocolate and cook for a moment, then add three tablespoonfuls cornstarch dissolved in one cupful of cold milk, and stir until thick and smooth. Add one teaspoonful of butter and continue stirring until the mixture begins to draw away from the sides of the pan, then cover and set aside. When nearly cold cream one-half of a tablespoonful of butter, the yolks of eight well-beaten eggs, two-thirds of a cupful of sugar and the chocolate paste. When well mixed stir in lightly the stiffly whipped whites of the eggs, turn into a buttered dish and bake in a moderate oven about forty minutes, or until it is well puffed up and fairly firm. Serve at once.

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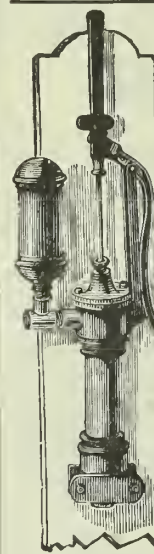
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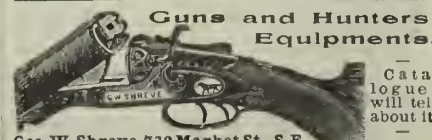
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Jan. 10, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	Jan.	May.
Wednesday.....	66½@66	70½@69½
Thursday.....	66½@66	69¾@69¼
Friday.....	65½@65¼	69½@68½
Saturday.....	65½@—	69 @68½
Monday.....	64½@—	68½@67¾
Tuesday.....	64½@65	67¾@68¼

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday.....	5s 11½d	5s 11½d
Thursday.....	5s 10½d	5s 10½d
Friday.....	5s 10½d	5s 10½d
Saturday.....	5s 10½d	5s 10 d
Monday.....	5s 10 d	5s 9½d
Tuesday.....	5s 9½d	5s 9½d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec., 1900.
Thursday.....	1 05 @1 05½	1 09¼@—
Friday.....	1 05 @1 04½	1 08½@—
Saturday.....	1 04½@1 04¼	1 08½@1 08½
Monday.....	1 04¼@1 03¾	1 07¾@—
Tuesday.....	1 03 @1 04¼	1 07¼@1 08½
Wednesday.....	1 03½@1 03½	1 07 @—

WHEAT.

Values for spot wheat are not quotably lower than a week ago, although the speculative markets in the meantime have declined materially. The recent additions to the grain loading fleet have had much to do with checking the downward trend of prices at this port for spot wheat. Trading in the spot market has continued, however, so far as observable, of small proportions. Chicago futures have declined during the week about 2c per bushel. The English market shows a break for options of the equivalent of 3½c per cental. In the local speculative market the weakness was not quite so pronounced as abroad. Call Board values at the close being only 2½@2½c per cental under the figures of a week ago.

The wheat markets of the world have presented as a whole very little of an encouraging character during the week under review. Despite reliable reports of another short crop in Australia on account of drouth, evidences of decrease in the "visible" supply of wheat in Europe, and a decided increase in the number of grain carrying ships in San Francisco harbor, the market has failed to develop any firmness. If there has been any increased purchasing of wheat on account of the good sized fleet of ships which arrived the past week, the buying has been done in the interior and not in this center. Exporters are undoubtedly carrying considerable wheat and barley, and have cargoes provided for most of these ships, as a large majority of the vessels had been chartered for some time and their arrival was anticipated. No matter who owns the wheat, however, that is going aboard these ships. Local conditions will show improvement to the extent of a displacement and sending aloft for foreign ports of not less than 40,000 tons of grain in consequence of the fleet which recently arrived. The ships now in port and engaged for wheat and barley represent a carrying capacity of about 75,000 tons. Prospects appear fair for more activity in the wheat market at an early day.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, \$1.05½@1.03.
December, 1900, delivery, \$1.09½@1.07½.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at \$1.03½@1.03½; December, 1900, \$1.07½.

California Milling.....	97½@1 05
Cal. No. 1 shipping, alongside.....	95 @ 97½
Oregon Valley.....	92½@1 00
Walla Walla Blue Stem.....	90 @1 02½
Walla Walla Club.....	80 @1 00
Off qualities wheat.....	75 @ 90

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	s-d@-s-d	6s2½d@-s-d
Freight rates.....	23½@25s	35@36¼s
Local market.....	\$ 13½@1 16¼	\$0 95@98¾

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Market lacks firmness, which is natural and to be expected, with the decidedly

depressed condition which has been experienced for some time past in the wheat market. Considerable flour has been lately forwarded outward, especially to China and Japan, about 25,000 barrels having been forwarded to the Orient per last two steamers.

Superfine, lower grades.....	\$2 40@2 60
Superfine, good to choice.....	2 65@2 90
Country grades, extras.....	3 00@3 25
Choice and extra choice.....	3 35@3 60
Fancy brands, jobbing.....	3 60@3 75
Oregon, Bakers' extra.....	3 00@3 40
Walla Walla, Bakers' extra.....	3 00@3 40

BARLEY.

The market since last review has shown fully as unsatisfactory condition for the producing and selling interest as previously noted. There is little doing on export account, and seldom is at this advanced date in the season. Most of the purchasing for local use is of low-grade barley, there being large quantities of this sort offering, and as there is no outside demand for the same, millers are enabled to operate to advantage. There is smutty and foul barley on market for which holders are not able to realize \$12 per ton. High-grade stock is being held much the same as recently quoted, and the market is not being heavily burdened with offerings of this sort, but values are largely nominal in the absence of noteworthy business, and it is doubtful if at present moderate concessions would induce very extensive buying.

Feed, No. 1 to choice.....	75 @ 80
Feed, fair to good.....	55 @ 70
Brewing, No. 1 to choice.....	87½@ 97½
Chevalier, No. 1 to choice.....	1 00 @1 07½
Chevalier, No. 2.....	— @ —

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

Seller, 1900, new, —@—
May, 1900, delivery, 71½@69¾c.
December, 1900, delivery, 70@69¾c.

Wednesday, at regular noon session of the Call Board, nothing was done in barley.

OATS.

In the matter of quotable values, the market remains practically the same as for a week or two preceding. Spot stocks have been materially augmented by recent arrivals, mainly from Washington. Most of the oats coming forward, however, go direct to millers and feed men, having been purchased prior to shipment. Values for choice to select qualities are being as a rule well maintained, any weakness apparent in the market being confined almost wholly to the cheaper grades.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 15 @1 22½
White, poor to fair.....	1 07½@1 12½
Gray, common to choice.....	1 10 @1 20
Milling.....	1 15 @1 25
Surprise, good to choice.....	1 20 @1 30
Black Russian.....	90 @1 02½
Red.....	95 @1 20

CORN.

Business in this cereal is not of extensive volume. Such sales as are effected are at somewhat lower figures than were current a week ago, with a rather weak tone for Large Yellow and White. Prices for these kinds are likely to remain near existing levels for some time to come. Small Yellow is too scarce to admit of much trading, but very little is required to satisfy the demand at current rates.

Large White, good to choice.....	1 02½@1 05
Large Yellow.....	1 02½@1 05
Small Yellow.....	1 35 @1 40
Eastern Mixed.....	1 00 @1 02½

RYE.

Offerings and inquiry are both of a rather light order. The market is fairly firm at existing quotations.

Good to choice, new..... 1 02½@1 07½

BUCKWHEAT.

A small quantity arrived a few days ago, the first in many weeks. In quotable values there are no changes to note.

Good to choice..... 2 00 @2 10
Silverskin..... — @ —

BEANS.

Conditions remain much the same as at date of last report, the market being rather quiet. This is usually a dull period in the bean trade. Despite the prevailing inactivity, however, values for all desirable qualities are being quite well maintained. Lady Washingtons are in request and higher. Seriously defective beans are not being sought after and are difficult to place, even at low figures, as compared with prices asked for prime to choice. The quantity of damaged stock is not so great as many expected early in the season.

Pea, fair to good, 100 lbs.....	2 75 @3 00
Small White, good to choice.....	2 75 @2 90
Lady Washington.....	2 40 @2 60
Butter, small.....	3 75 @4 00
Butter, large.....	— @ —
Pinks.....	2 50 @2 75
Bayos, good to choice.....	3 25 @3 50

Reds.....	3 75 @4 00
Red Kidneys.....	3 00 @3 50
Limas, good to choice.....	4 85 @5 00
Black-eye Beans.....	4 50 @4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @2 75
Garbanzos, small.....	2 00 @2 25

DRIED PEAS.

Prime to choice are readily salable, especially of the Niles variety, but there are not many offerings. Prices remain quotably as before.

Green Peas, California.....	2 10 @2 15
Niles Peas.....	2 00 @2 15

WOOL.

Stocks in the hands of growers are now small, both here and in the interior. Market is naturally quiet and will undoubtedly remain so during the balance of the season. There is a very healthy tone, however, as prospects at corresponding date have seldom been better. There is every indication that the coming clip in this State will be in generally fine condition. Higher prices than were current last spring are certain to be realized, and there will be no lack of demand for good to choice wools.

SPRING.

Oregon Eastern, choice.....	13 @16
Oregon Eastern, fair to good.....	11 @13
Oregon Valley.....	17 @20

FALL.

Humboldt and Mendocino.....	16 @17½
Middle Counties, defective.....	9 @12
Northern, free.....	11 @14
Northern, defective.....	9 @11
Southern Mountain.....	9 @11
San Joaquin Plains.....	— @ —
San Joaquin Lamb.....	— @ —

HOPS.

There is no evidence in this center of any noteworthy business in this line. The inquiry is mainly for high grade, with buyers as a rule very particular as to quality. Offerings are mostly of rather ordinary quality, so it is difficult for buyers and sellers to come together. The buyer wants what the seller hasn't got, and the seller desires to realize on what the buyer is not looking for. Quotable rates show no change, but in the absence of any transfers of consequence, values are largely nominal.

Good to choice, 1899 crop..... 6 @ 9

HAY AND STRAW.

Prices for hay keep at a low range and the market in all essential respects is in fully as poor shape for the producer and seller as before noted. The weather was more favorable for trading, but there was no material change in the volume of business transacted, the demand continuing decidedly slow, dealers as a rule having no desire to purchase against their prospective needs.

Wheat.....	7 00@9 50
Wheat and Oat.....	7 00@9 00
Oat.....	6 50@8 50
Barley.....	6 00@7 00
Alfalfa.....	5 00@7 00
Timothy.....	— @ —
Compressed.....	7 00@9 50
Straw, ½ bale.....	30 @ 45

MILLSTUFFS.

The drift of values remained favorable to the buying and consuming interest. Especially was this the case on Bran and Rolled Barley, these descriptions being offered quite freely.

Bran, ½ ton.....	12 00@13 00
Middlings.....	15 00@18 00
Shorts, Oregon.....	12 00@14 50
Barley, Rolled.....	15 00@16 00
Cornmeal.....	23 50@24 00
Cracked Corn.....	24 50@25 00

SEEDS.

Stocks of all descriptions are small, admitting of little trading, or of little opportunity to test values. Present quotations are based mainly on jobbing rates.

Mustard, Trieste.....	3 25@3 50
Mustard, Yellow.....	4 50@4 75
Flax.....	2 00@2 25
Canary.....	3¼@ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4½
Timothy.....	4 @ 4½
Alfalfa, Utah.....	7 @ 9

BAGS AND BAGGING.

In the spot market there is very little doing in bags of any description. Most kinds are being steadily held, with prospects of a tolerably firm market the coming summer. There is some purchasing of Calcutta Grain Bags, buyer June-July, this year's importation, within range of 6@6½c, mostly at 6½c.

Calcutta Grain Bags, buyer June-July.....	6¼@—
Calcutta Grain Bags, spot.....	6½@—
San Francisco Grain Bags, 2x36, spot.....	6½@—
State Prison Bags, ½ 100.....	— @ —
Wool Sacks, 4 lbs.....	— @3½
Wool Sacks, 3½ lbs.....	— @28½
Fleece Twine.....	7½@—
Gunnies.....	— @12½
Bean Bags.....	4½@5¼
Fruit Sacks, cotton.....	6¼@7¼

HIDES, PELTS AND TALLOW.

Hides are not arriving very freely, nor are they likely to for some time to come. Values keep at a tolerably high range, but demand cannot be termed brisk at full current rates. The Pelt market remains much as last noted, offerings finding custom at prevailing figures about as rapidly as received. Tallow is without quotable change, but market is not particularly firm.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.	11¼	10¼
Medium Steers, 48 to 56 lbs.	10¼	9¼
Light Steers, under 48 lbs.	10	9
Heavy Cow Hides, over 50 lbs.	10½	9½
Light Cow Hides, under 50 lbs.	10	9
Wet Salted Kip.	10	9
Wet Salted Veal.	10	9
Wet Salted Calf.	11	10
Dry Hides.	18	14
Dry Kip and Veal, 11 to 16 lbs.	17	13
Dry Calf, under 4 lbs.	18	15
Salted Horse Hides, large.	2 50	@ —
Salted Horse Hides, medium.	2 00	@ —
Salted Horse Hides, small.	1 00	@ —
Dry Horse Hides, large.	2 00	@ —
Dry Horse Hides, small.	75	@ 1 00
Dry Colts' Hides.	50	@ 75
Pelts, long wool, ¾ skin.	1 00	@ 1 25
Pelts, medium, ¾ skin.	70	@ 90
Pelts, short wool, ¾ skin.	35	@ 60
Pelts, shealing, ¾ skin.	20	@ 35
Deer Skins, best summer.	27½	@ 30
Deer Skins, good medium.	20	@ 22½
Deer Skins, thin winter.	—	@ 10
Elk Hides.	10	@ 12
Tallow, good quality.	4½	@ 5
Tallow, No. 2.	4	@ 4½
Goat Skins, perfect.	30	@ 37½
Goat Skins, damaged.	10	@ 20
Kid Skins.	5	@ 10

HONEY.

Offerings and demand are both light, and this must continue to be the case until the end of the season. Business is necessarily of a retail character, but at generally firm figures, especially for choice Extracted, which is in lighter supply than Comb.

Extracted, White Liquid.....	7¼@ 8
Extracted, Light Amber.....	7 @ 7½
Extracted, Amber.....	5 @ 5½
White Comb, 1½ frames.....	11½@12½
Amber Comb.....	8 @10

BEESWAX.

Supplies are of small volume, and as demand is fair, values are being well maintained at previously quoted range.

Good to choice, light, ½ lb.....	26 @27
Dark.....	24 @25

LIVE STOCK AND MEATS.

The general features of the market have not changed materially since last review. Beef ruled steady, with fair demand for best qualities. Veal and Lamb were in quite limited receipt and met with a tolerably firm market. Mutton sold at generally improved rates, with market rather firm at the advance. Hogs of small to medium size sold to tolerably good advantage, but at no higher figures than preceding week. Large Hogs remained in slim request.

Beef, first quality, dressed, net ½ lb.....	7 @ 7½
Beef, second quality.....	6½@ 6¾
Beef, third quality.....	6 @ 6½
Mutton—ewes, 7@7½c; wethers.....	7½@ 8
Hogs, hard grain fed, medium.....	5½@ 5¾
Hogs, small, fat.....	5½@ 5¾
Hogs, large, hard.....	5 @ 5¼
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ 5½
Hogs, country dressed.....	5¼@ 6
Veal, small, ½ lb.....	8 @10
Veal, large, ½ lb.....	8 @ 9
Lamb, spring, ½ lb.....	9 @—

POULTRY.

Receipts were mostly Eastern poultry, full grown, causing the market for this sort to rule much easier than for small to medium young stock, which was in limited supply, buyers in quest of the same having to depend almost wholly on offerings of home product. At the close small young stock went at lower figures than early in the week.

Turkeys, dressed, ½ lb.....	15 @ 17
Turkeys, live hens, ½ lb.....	13 @ 14
Turkeys, live gobblers, ½ lb.....	13 @ 14
Hens, California, ½ dozen.....	4 00 @5 00
Roosters, old.....	4 00 @4 50
Roosters, young (full-grown).....	4 50 @5 00
Fryers.....	4 50 @5 00
Broilers, large.....	4 00 @4 50
Broilers, small.....	3 00 @3 50
Ducks, ½ dozen.....	4 00 @5 00
Geese, ½ pair.....	1 75 @2 00
Goslings, ½ pair.....	1 75 @2 00
Pigeons, old, ½ dozen.....	1 25 @—
Pigeons, young.....	2 50 @3 00

BUTTER.

While the market as a whole presents a rather weak tone, a few favorite marks, mainly of Northern California creameries, are bringing comparatively stiff prices. The transition period being now on, it is necessary for many consumers to switch

off from Northern creameries to the product of the middle counties, and this causes temporary irregularity in values.

Creamery, extras, # lb.	25 @26
Creamery, firsts.	23 @24
Creamery, seconds.	22 @23
Dairy, select.	22 @23
Dairy, seconds.	18 @21
Dairy, soft and weedy.	— @—
Mixed store.	14 @16
Creamery in tubs.	18 @21
Pickled Roll.	— @—
Firkin, California, choice to select.	19 @22
Firkin, common to fair.	16 @18

CHEESE.

Market is showing more ease, buyers being granted concessions on favorite brands of new cheese which would not have been given a week ago. Receivers are anxious to prevent accumulations, as they anticipate lower values.

California, fancy flat, new.	11½ @—
California, good to choice.	10 @11
California, fair to good.	9½ @10½
California Cheddar.	— @—
California, "Young Americas".	10 @12

EGGS.

As was to have been anticipated, this market has displayed a weak tone. Arrivals of fresh showed some increase, while receipts and offerings of cold storage stock were on the decrease. The weakness of the market was not so much the result of any increase of stocks of fresh eggs as of a general belief on the part of both buyers and sellers that prices must soon go lower.

California, select, large, white and fresh.	32½ @—
California, select, irregular color & size.	30 @32½
California, good to choice store.	27½ @30
Eastern, as to section and grading.	— @—
Eastern, cold storage.	17 @20

VEGETABLES.

In the market for Winter vegetables, the tendency in the main was to more firmness, particularly on Onions of choice to select quality, which were in light stock. Early Spring vegetables from Los Angeles section made an increased showing and prices for most kinds averaged lower than last quoted.

Beans, String, # lb.	2½ @ 4
Cabbage, choice garden, # 100.	50 @ —
Cauliflower, # dozen.	50 @ —
Egg Plant, # lb.	10 @ 12½
Garlic, # lb.	5 @ 6
Onions, Yellow, Cal., good to choice.	1 00 @1 30
Onions, Oregon, # cental.	1 10 @1 40
Peas, Sweet, garden, # lb.	2½ @ 3½
Peppers, Green Chile, # lb.	2 @ 4
Peppers, Bell, # large box.	— @ —
Rhubarb, # box.	— @ —
Squash, Marrowfat, # ton.	— @ —
Squash, Summer, # box.	75 @1 00
Tomatoes, Los Angeles, # crate.	75 @1 00
Tomatoes, Bay, # box.	— @ —

POTATOES.

Values for all merchantable qualities have been tending to higher levels, but the firmness of the market is confined principally to high grade stock. Present offerings are largely Oregon product and of the Burbank Seedling variety. Sweeties were held at an advance, in consequence of decreased receipts.

Burbanks, River, # cental.	70 @1 00
Burbanks, Bay counties, # cental.	— @ —
Burbanks, Humboldt.	70 @1 15
Burbanks, Oregon.	75 @1 30
River Reds.	— @ —
Burbanks, Salinas, # cental.	1 00 @1 25
Early Rose.	85 @ 95
Garnet Chile.	90 @1 10
New Potatoes, # lb.	2 @ 2½
Sweet, River, # cental.	— @ —
Sweet Merced.	1 50 @1 60

The Fruit Market.

FRESH FRUITS.

The Apple is about the only fresh fruit now offering, aside from citrus and tropical, in sufficient quantity to quote. The Apple market is firm for fancy stock, such as select Spitzenberg, choice Virginia Greenings and fancy Newtown Pippins, these being held as a rule above quotable rates. Spitzenberg and Newtown Pippins are held up to \$1.75 per box. Fine Virginia Greenings are too scarce to be quotable. Apples of ordinary variety and of common to fair quality are plentiful and in slow request at same low figures as have been current for this class of stock for a couple of months past.

Apples, fancy, 4-tier box.	1 25 @1 50
Apples, good to choice, # 50-lb box.	75 @1 00
Apples, common to fair, # 50-lb box.	25 @ 50

DRIED FRUITS.

The dried fruit market has not shown much life since last review, still it has been by no means wholly stagnant, and there are fair prospects for considerable movement in the near future, a good demand being anticipated on account of the new mining districts in Alaska. Aside from Prunes, there are no heavy stocks of any variety, and no very heavy demand during the spring months would be necessary to effect a clean-up. Some movement is reported in Prunes, but at rather low fig-

ures, a sale of forty carloads of Visalia stock being noted at 2½c, 5 per cent off, but the Prunes are understood to be below the average in quality. Peaches are still in request on speculative account, but there are few obtainable at figures in accord with the views of speculative operators. The Peach market is firmer than a week ago, quotable rates being fully ¼c higher. The United States Government is in the market for Apples, Peaches and Prunes, and will open bids on the 12th inst. for the delivery of 100,000 lbs. Apples, 100,000 lbs. Peaches and 50,000 lbs. Prunes. Considering the time of year, and the generally unsatisfactory condition which is ordinarily experienced immediately after the holidays, the dried fruit market at present is in the main in very fair shape for the holding and producing interests.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb.	10½ @12
Apricots, Royal, fancy.	12½ @13
Apricots, Moorpark.	13 @15
Apples, in 50-lb boxes, rings, pressed, fancy.	7½ @—
Apples, 50-lb boxes, rings, pressed, good to choice.	6 @ 7
Figs, White, fancy pressed.	6½ @ 7½
Peaches, unpeeled, good to choice.	6½ @ 7½
Peaches, unpeeled, fancy.	7½ @ 8
Peaches, peeled, in boxes.	12½ @15
Pears, unpeeled Bartletts, halved, fancy.	9 @10
Pears, halved, unpeeled Bartletts.	6½ @ 8
Pears, quartered, unpeeled Bartletts.	6½ @ 7½
Plums, Black, pitted.	6½ @ 7½
Plums, White and Red.	7 @ 8
Prunes, in sacks 40-50s.	4 @ 4½
50-60s.	3½ @ 3¾
60-70s.	3¾ @—
70-80s.	3¾ @—
80-90s.	3 @—
90-100s.	2½ @—
110-130s.	2 @—
Prunes in boxes, ½c higher for 25-lb boxes, ¼c higher for 50-lb boxes.	— @—
4 sizes Santa Claras and equal.	2½ @—
4 sizes San Joaquin and Northern.	2½ @ 2¾
Prunes, Silver.	4 @ 7

COMMON SUN-DRIED.

Apples, sliced.	4 @ 5
Apples, quartered.	4 @ 5
Figs, Black.	3 @ 4
Figs, White.	— @—
Peaches, unpeeled.	— @—

RAISINS.

Not much doing in this line, and there are no evidences of there being much stock upon which to operate. Card rates as fixed by the Raisin Growers' Association remain as previously noted. Present offerings are mainly Pacific 2, 3 and 4 crown loose Muscatel, with a few Orientals of same grades, and a few Standards, mostly 3 crown. Unbleached Sultanas are scarce and in request, but there is no scarcity of bleached.

F. O. B. FRESNO DELIVERY.

London Layers, 6-crown, # box.	— @—
do do 5-crown, # box.	— @—
do do 4-crown, # box.	— @—
do do 3-crown, # box.	1 60 @—
do do 2-crown, # box.	1 50 @—
Valencia Layers, # 20-lb box.	80 @1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.	6¼ @—
Loose Muscatel, seedless.	5 @—
Pacifics.—2 crown loose Muscatel, 5¼c; 3-crown, 6c; 4-crown, 6½c; seedless, 4¾c.	
Orientals.—2-crown loose Muscatel, 4¾c; 3-crown, 5¼c; 4-crown, 6c.	
(Above prices for loose raisins are for 50-lb boxes.)	
Thompson Seedless.—Bleached fancy, # lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.	
Sultanas.—Bleached fancy, # lb., 8½c; choice, 7½c; standard, 6½c; prime, 5c. Unbleached, 5c.	
Loose Valencia.—Fancy, # lb., 5½c; choice, 4½c; standard, 3½c.	
Valencia Clusters.—Fancy, # lb., 7c; choice, 6c; standard, 5c.	

CITRUS FRUITS.

Although the weather has been a little warmer and consequently better for Oranges entering into consuming channels, the market has remained favorable to buyers, with offerings ahead of the demand. Next week tri-weekly auction sales of this fruit will be inaugurated in this center. The Lemon market shows a little better condition as regards movement, but prices remain on about same plane as previously quoted. Limes are in ample supply for the demand and values are unchanged.

Oranges—Navels, # box.	1 00 @2 00
California Seedlings.	65 @1 25
California Tangerine, # box.	75 @1 25
Grape Fruit, # box.	1 50 @2 50
Lemons—California, select, # box.	3 00 @—
California, good to choice.	2 00 @2 50
California common to fair.	75 @1 50
Limes—Mexican, # box.	4 00 @4 50
California, small box.	75 @1 25

NUTS.

Market throughout is devoid of any especially new or noteworthy feature. Values for Almonds and Walnuts are nominally unchanged, with little doing in either variety. Peanuts are in light stock and fair request at full current rates.

California Almonds, shelled.	17 @20
California Almonds, paper shell, # lb.	11 @12
California Almonds, soft shell.	10 @11
California Almonds, hard shell.	6 @ 7
Walnuts, White, soft shell.	10 @11
Walnuts, White, California, standard.	9 @10
Chestnuts, California Italian.	9 @10

Peanuts, California, fair to prime.	4½ @ 5½
Peanuts, Eastern, hand-picked.	6 @ 6½
Pine Nuts.	5 @ 5½

WINE.

The market has shown no new features since last review. There have been no developments as yet affording any opportunity to give quotations for the vintage of 1899. In a few weeks last year's claret will probably be quotable. Of the older wines in the hands of wholesalers and jobbers, there is a moderate movement outward, both by sea and rail. For dry wines from one to three years old, values remain quotably as previously noted, 15@20c. per gallon, San Francisco delivery, as to quality, quantity and other conditions.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks.	75,843	2,985,555
Wheat, centals.	95,743	2,437,191
Barley, centals.	13,300	3,811,456
Oats, centals.	26,935	561,793
Corn, centals.	2,920	82,599
Rye, centals.	1,410	83,890
Beans, sacks.	2,943	286,183
Potatoes, sacks.	18,200	695,140
Onions, sacks.	1,041	118,604
Hay, tons.	1,149	95,962
Wool, bales.	138	35,297
Hops, bales.	39	7,451

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks.	39,328	1,793,571
Wheat, centals.	135,095	2,085,009
Barley, centals.	4,443	2,986,656
Oats, centals.	847	24,771
Corn, centals.	967	9,226
Beans, sacks.	118	16,997
Hay, bales.	3,410	60,876
Wool, pounds.	23,343	3,484,178
Hops, pounds.	1,539	661,048
Honey, cases.	2	3,228
Potatoes, packages.	—	45,380

California Dried Fruit at New York.

New York, Jan. 10.—California dried fruits: Not much doing at present. Evaporated apples, common, 6@6½c; prime wire tray, 6½@7c; choice, 7½@8c; fancy, 8½@9c. Prunes, 3½@6c. Apricots, Royal, 13@15c; Moorpark, 15@18c. Peaches, unpeeled, 7½@10c; peeled, 22@22c.

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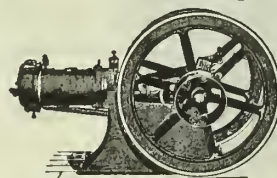
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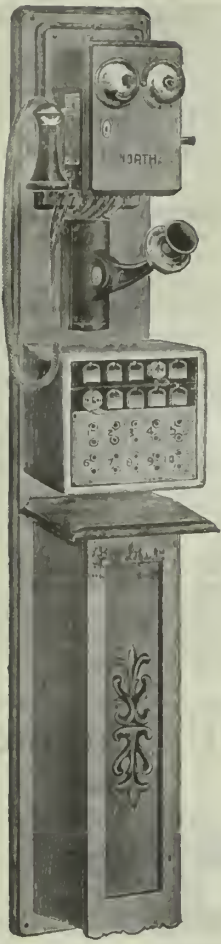
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Switchboard.

Farmers' Community Telephone Exchanges.

When the telephone was invented few people thought that the time would ever come when this necessity of modern civilization would be put within the reach of the farmers. Such, however, is now the ease, the independent telephone companies having accomplished this desirable end. They formerly put the benefit of this convenience within the reach of the great middle class in this city; now they have gone one better and are commencing to furnish service to the farmers. Telephony can never reach

its place in civilization until the farmer is able to come into immediate verbal intercourse with his neighbor, physician, butcher and grocer. Not only has this been done, but where this service is furnished to farmers some exchanges are even giving their patrons the latest market reports, thus enabling them to tell when to sell their products to the best advantage. So, also, can the commission man in the city come into direct relations with those who furnish him with his products.

The North Electric Company, of Cleveland, Ohio, has recently brought out what it calls a "farmers' community exchange," by the use of which the city exchange is enabled to furnish a service to the farmers in its neighborhood at a price that is profitable to the exchange and, at the same time, within the reach of patrons in the country.

In the accompanying chart is shown a method which the North Company

advocates, in placing community exchanges in the territory surrounding a city. At various points are located one of the switchboards illustrated herewith. From this central point radiate eight or ten lines, to each of which are connected several subscribers, preferably not over ten. This community exchange is connected by a trunk line to the city exchange, as are also the trunk lines from the several other community exchanges. Patrons are enabled to converse with any of the other subscribers to their own exchange, or, by trunking into the city exchange and from there to any of the other community exchanges, are enabled to reach any of the patrons of the city or other community exchanges. The subscriber can likewise connect to any of the toll lines that may run into the city exchange.

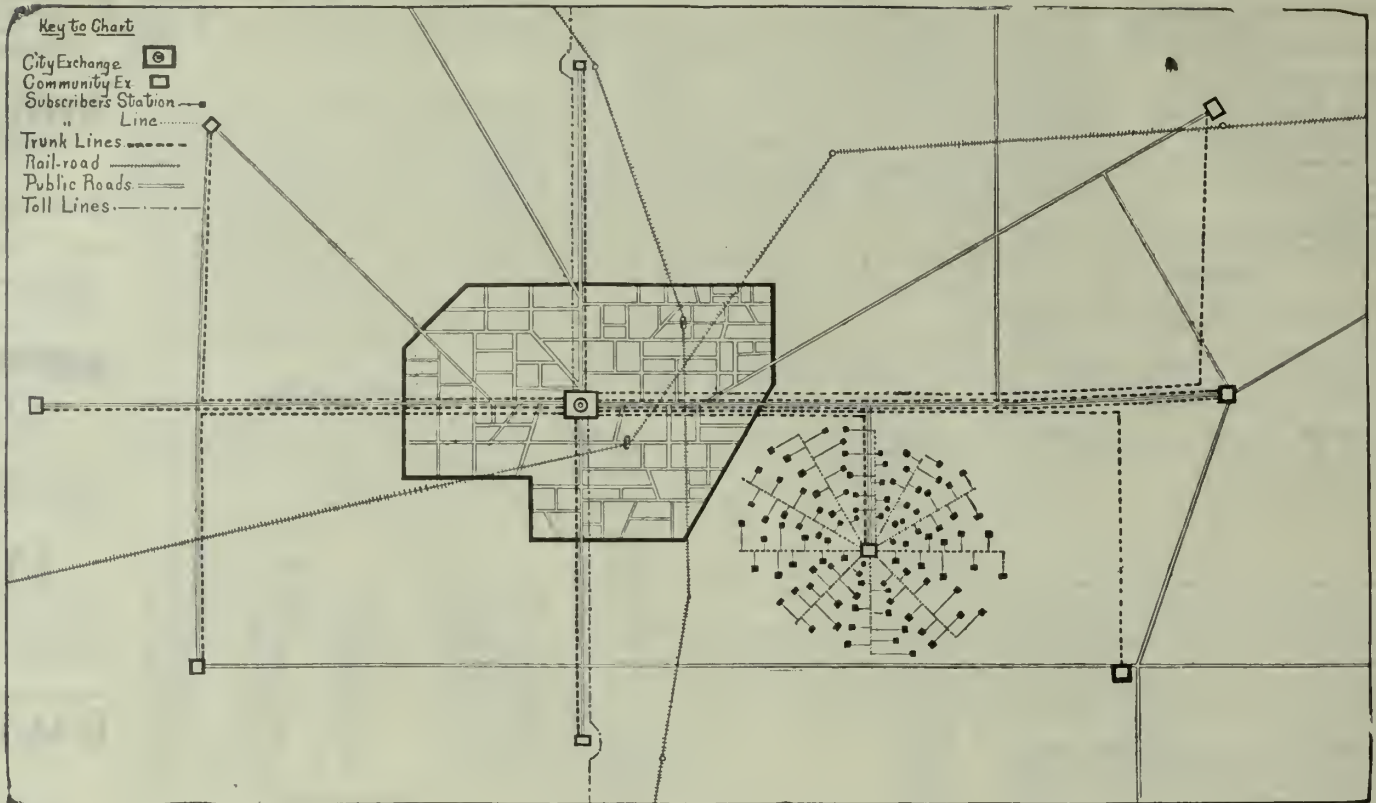
Each farmer's telephone is of the long-distance type, and he is enabled to talk to any point that the toll service reaches. The switchboard used at

the community exchange is very simple and efficient and, it is stated, practically impossible to get out of order.

Quite a number of telephone exchanges have adopted this service with profit, and are now paying dividends where they formerly cleared but little money.

It will be noticed in the chart that the lines from the community exchange to the subscribers' stations are shown in connection with only one community exchange. If the reader will imagine the lines radiating from the other community exchanges shown, he will see that the territory is completely covered, and the patronage of the average exchange would often be more than doubled.

The day should speedily come when every city exchange can give service to the farmers in its vicinity, and when this time comes telephony will have a scope never before dreamed of by the majority.



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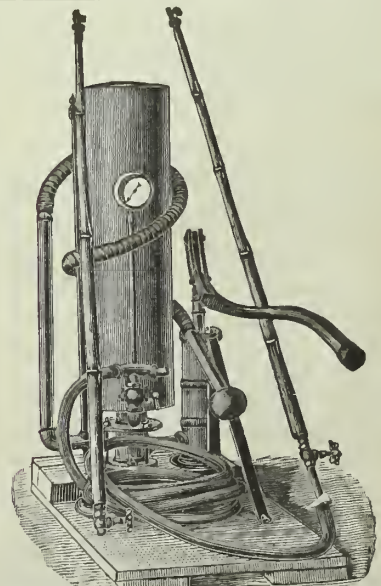
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Patrons of Husbandry.

A New Book by Mr. Lubin.

Patrons will be interested to hear of a new book by Bro. David Lubin of Sacramento, to be published by G. P. Putnam's Sons of New York, entitled "Let There Be Light." It is the story of a Workingmen's Club, its search for the causes of poverty and social inequality, its discussion, and its plan for amelioration. Six workingmen, experiencing the evils and imperfections of the industrial and social conditions under which they labor, meet to discuss those conditions and to seek the causes of those evils. They first discuss our Government; next they proceed to the industrial and social question. They compare the competitive system with socialism, and for the ills disclosed they find no remedy that will stand the test of reason. Their investigations lead them to the conclusion that the causes of the inequality of which they feel the burden are to be sought in the defects of religious systems. Afterwards their discussions and conclusions are reviewed by people not of the working classes and startling conclusions are reached. The book promises to prove a sensation in circles given to discussion of economics and religion.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING DEC. 26, 1899.

- 640,158.—WEIGHING SCALE—J. S. Cox, Escondido, Cal.
639,714.—THILL COUPLING—B. D. Crawford, Salem, Or.
640,109.—BRIQUETTE PRESS—J. T. Davis, S. F.
640,116.—SAIL—J. Duthie, Portland, Or.
639,172.—SAW SET—F. Hanna, Santa Ana, Cal.
640,133.—KEY FASTENER—Hazeltine & Dodd, Los Angeles, Cal.
640,136.—SOLDERING MACHINE—R. D. Hume, Gold Beach, Cal.
639,855.—SEPARATOR—R. W. Jessup, S. F.
639,899.—CAR COUPLING—A. Keusink, Tacoma, Wash.
639,856.—BOTTLE STOPPER—H. A. Knight, Alameda, Cal.
640,142.—GAS GENERATOR—W. F. Love, Spokane, Wash.
639,858.—IRRIGATING PIPES—Martin & Ormand, Riverside, Cal.
639,756.—RAISIN SEEDER—W. M. McConaughay, Fresno, Cal.
640,023.—AIR PUMP—P. B. Perkins, Los Angeles, Cal.
639,766.—GOLD SAVING DEVICE—L. E. Porter, Los Angeles, Cal.
639,906.—FRUIT GRADER—R. M. Pratt, St. Helena, Cal.
640,034.—CANNING MACHINE—O. Rubarts, Newport, Or.
639,911.—BUTTER CUTTER—R. A. Simpson, Ferndale, Cal.
639,871.—RAISIN SEEDER—Snyder & Hansen, Fresno, Cal.
640,043.—CURTAIN PIN—S. F. Stenner, Portland, Or.
639,835.—SAWMILL CARRIAGE—A. J. West, Aberdeen, Wash.
640,062.—CIRCUIT BREAKER—E. F. Winfield, S. F.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

BOTTLE STOPPER.—H. A. Knight, Alameda, Cal. No. 639,856. Dated Dec. 26, 1899. This invention relates to a faucet which is especially designed to be used in connection with bottles containing soda water or other effervescent liquid which it may be desired to partially draw off without destroying the value of the remainder by allowing the gas to escape. One portion of the stopper extends into the neck of the bottle and the other exterior thereto, and is provided with a surrounding flange. Spring clamps each have one end secured to the bottle neck and the opposite end free and adapted to spring over the flange of the stopper and hold it in place. An elastic clamp embraces the two clamps which are secured to the bottle

neck at a point between the ends to hold them in place. A slidable cap is fitted on to the stopper portion and has a discharge nozzle, so that, when it is pressed inward, a valve which is carried by the cap will be opened to allow the liquid to escape. When released, the pressure forces the cap outwardly, and a spring closes the valve at the same time.

CORSET STAYS.—Mary E. Thompson, San Francisco, Cal. No. 639,463. Dated Dec. 19, 1899. This invention relates to a device for interlocking and securing the edges of clothing, wearing apparel and the like. It consists of metallic hooks and loops formed upon the edges of the meeting plates, the loops having perforations to receive the hooks and having the edges turned over so as to partially enclose the points of the hooks after the two have been engaged. These turned over portions may also have holes or slots made in them to completely lock the points of the hooks and prevent their being accidentally disengaged.

The Great Convention at San Jose.

TO THE EDITOR:—It is now generally recognized that the fruit industry, if carried on in a business-like manner, is destined to produce greater wealth for California than any other single occupation our people can engage in. The one thing needed to secure this result is the organization of the growers so that the marketing of all kinds of fruits, nuts and wines shall be done on sound business principles. At the recent convention of fruit growers in San Jose this subject was thoroughly discussed and the convention appointed a committee of twenty-one to bring about the organization desired.

This committee has issued a call to all producers of deciduous fruits, green

\$100 Reward, \$100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

Address: F. J. CHENEY & CO., Toledo, O.
Sold by Druggists, 75c.
Hall's Family Pills are the best.

Bromus Inermis. 6 Ton Hay.

That sounds well—6 tons. That is what Salzer's Bromus will give you every time, no matter where you live; and Victoria Rape costs but 25c. a ton to grow. The Million Dollar Potato is immense! Largest Vegetable Seed Growers in America. Send this notice with 10c. for Farm Seed Samples and Catalog, to John A. Salzer Seed Co., La Crosse, Wis. [F]

Messrs. Loomis & Nyman, Tiffin, Ohio, for thirty years famous as inventors and manufacturers of well drilling machines, are giving credit to the newspapers for the big rush at their factory. The entire mechanical force is working day and night, but the firm is not able to supply the orders. The firm declare the newspapers made the boom.

ELGIN Watches keep accurate time.
Sold by jewelers in cases to suit.
Prices reasonable.

and dried, and particularly to prune growers, to send delegates to a convention, to be held in San Jose on the 15th and 16th of January, for the purpose of effecting two organizations, one of prune and dried fruit growers and one of green fruit growers. The time is ripe for this movement, its success means prosperity to every individual interested in this State, and it has therefore become the urgent duty of every one interested in his own personal gain, if not on the higher ground of the welfare of California, to do everything possible to bring to a speedy and successful issue this movement to organize our fruit growers. Such movements as this frequently fail because they cannot be carried on without a large expenditure of time, labor and money, which are most difficult to secure through voluntary contributions. In such matters, however, the press is all-powerful. With its earnest assistance the whole

State can be aroused and the movement carried through triumphantly. As a portion of my contribution to the good work I make this appeal to the press of California to urge the deciduous fruit growers, through their granges, farmers' clubs, institutes, and by meetings in every schoolhouse in the fruit growing districts, to appoint delegates to the convention to be held in San Jose on the 15th and 16th of January next. The number of delegates from each place is not material, so long as there is sent a large number of representative men. The time to act is now. Strike while the iron is hot and the result will be an organization shaped as we should have it, and one that will put millions of dollars into the pockets of our fruit growers, from which it is sure to pour out into all the channels of trade. There is not a day to spare if thoroughly good work is to be done.
Fresno. M. THEO. KEARNEY.




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Made of large wires, best spring steel, heavily galvanized. Provision made for expansion and contraction, so it is proof against all animals and all changes of weather. As nearly everlasting as anything on earth can be.

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Machine Works

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Where, with Enlarged and Increased Facilities,
they are better than ever prepared to do

First-Class Machine Work

Promptly, and at Reasonable Prices, and will
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Thomson & Evans Steam Pumps,

Deep Well Pumps, Power Pumps, Etc.,
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Iron cut, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making Pipe. Estimates given when required. Arc prepared for coating all sizes of Pipes with Asphaltum.



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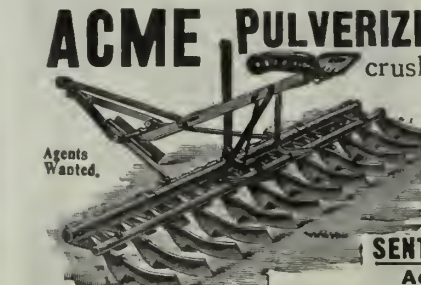
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All Steel Except Tongue and
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PLATFORM : : : : **TRUCK.**

Weight, 600 lbs.
Will Carry 4000-lb. Load.
Most Profitable Truck Made,
both to
Dealers and Farmers.

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Manufactured by..... **HAVANA METAL WHEEL CO., Havana, Ill.**

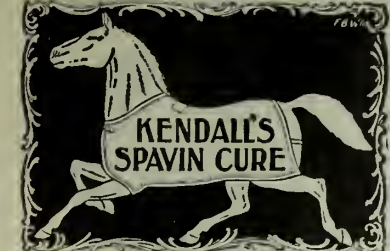


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Works thousands of cures annually. Endorsed by the best breeders and horsemen everywhere. Price, \$1.50 per bottle. As a liniment for family use it has no equal. Ask your druggist for Kendall's Spavin Cure, also "A Treatise on the Horse," the book free, or address DR. B. J. KENDALL COMPANY, ENOSBURG FALLS, VT.

CORRESPONDENCE.

Fruit and Water in Eastern Tulare.

TO THE EDITOR:—No person can travel through the eastern portion of Tulare county without being impressed with the natural beauty of the county. The foothills slope down to level plains of great extent, broken here and there by the channels of water courses, each bordered with a fringe of timber, that marks its pathway toward the center of the great San Joaquin valley. Especially are these beautiful features noticeable in the vicinity of Porterville, Lindsay and Exeter. Here one stands almost at the feet of the great mountain range whose snow-capped heights loom up against the eastern sky. To go into an orchard with such an outlook, and there pick choice specimens of golden semi-tropical fruits, is an experience calculated to tingle the blood of an Eastern tenderfoot, if not of a Californian bred in less favored regions.

The oranges raised in what is known as the "Porterville country"—which includes the other two localities above named—are unquestionably as fine as any that grow in California. The Porterville claims that his fruit is the best, not because it is earlier than that grown elsewhere, but because it is larger, cleaner and sweeter. Some of the specimens are certainly very large, even too large for desirability in the market. Undeniably, too, the fruit is clean, being unaffected by scale and untarnished with smut; no brushing machines are necessary in the Porterville country. The quality of the fruit is good, being of lively flavor and of sound body. This season the first shipment of oranges from California (Oct. 23d) was from this district.

THE LINDSAY LEMON.—During the recent visit of our correspondent, he saw several carloads of lemons from the celebrated Lemon Cove and adjacent localities, which were being shipped just as they came from the orchard. These lemons were purposely picked while somewhat unripe, but they were filled with juice, and would arrive in market in prime condition, rivalling the famed Sicily lemon of commerce. The lemon crop has been short this season, and the fruit here mentioned brought \$2.25 to \$2.30 per box to the grower.

LEMON COVE.—Although the locality first planted to citrus fruits in this part of the State (Lemon Cove) is somewhat remote from Porterville, the residents of the latter section, by reason of irrigation facilities, were so quick to recognize the possibilities of the situation that their orange groves were soon of great extent. Planted first in a sheltered cove of the mountains, the orchards have gradually encroached upon the level foothill country, and in either locality the fruit is of the same excellent quality and the crop is equally reliable. In the vicinity of Lindsay and Exeter the conditions seem to be ideal for citrus culture. Only lack of water has prevented more extensive development. But even now there are 2000 acres planted to oranges and lemons in the immediate vicinity of Lindsay, and there will be shipped from that station the present season as many carloads of fruit as from Porterville. Each town will send out something over 100 carloads of oranges. Lindsay will ship ten to twelve carloads of lemons.

PUMPING FOR IRRIGATION.—So far irrigation at Lindsay has been accomplished almost entirely by means of pumping plants. There is a ditch sys-

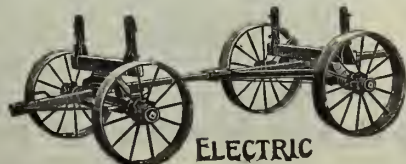
tem permeating the district, but the natural water supply having been found somewhat unreliable, recourse was had to wells and pumps. In the locality there exists a water-bearing stratum 20 to 40 feet beneath the surface. The supply has proven ample for all the needs of citrus culture. The pumps were at first run by gasoline or coal oil engines, but since the advent of the Mt. Whitney Power Co., electrical energy has been largely substituted. At the premises of Postlethwaite & Sons and Mr. Berry, near Lindsay, our correspondent noted a model pumping plant, as well as most beautiful orchards. The orange groves cover an extent of 240 acres. The four-year-old trees were heavily laden with fruit of beautiful quality and of uniform size. Water for these tracts is pumped from wells by the use of three dynamos, each of 15 H. P. The pumps throw a beautiful stream of limpid water, which is conducted to various parts of the orchards through wooden flumes, in which frequent openings allow the life-giving fluid to flow out upon the land between the long rows of rapidly growing trees.

There are other pumping plants of the same character about Lindsay, and the groves give evidence of the excellence of the system of irrigation. It has been well remarked that the idea entertained by orchardists and farmers that they want water only two or three months in the year, is a delusion. The water right that is the most valuable is the one which is permanent and available at all times. The man who gets the benefit of a constant supply of water for irrigation is rarely the one to complain of its cost, but, on the other hand, the party who has little or no water, and who pays but little for it, is very often unable to pay that little because of short crops. Pumping for irrigation by electric power contemplates or allows of a constant supply of water, as the Mt. Whitney Power Co. make a stated charge per annum for each horse power, so that the irrigator, if his wells hold out, may keep his dynamos in motion day and night. This is a great advantage to a company of orchardists, who can unite in the purchase of a pumping plant, and by mutual agreement can use the water by turns more economically than can be done with individual plants.

LINDSAY DITCH SYSTEM.—Great as has been the success of orchardists in raising oranges and lemons at Lindsay and Exeter by irrigation from wells, this advantage is about to be exceeded by the opportunities for irrigation from an excellent ditch system. The Lindsay Land Company are about to begin the work of enlarging and extending their system of canals and ditches. They might not do this did they not at the same time have plans for increasing their water supply. This supply is expected hereafter to be constant and more than double its former extent. The company have found a heavy water-bearing stratum near the head of their ditch. Explorations have shown that an underground current of water, practicably inexhaustible, may be tapped at a shallow depth. Here will be stationed an immense pumping plant, to be run by power furnished by the Mt. Whitney Electric Power Co. All water that may be needed will be pumped into the head of the ditch. The ditch will be enlarged to twice its present capacity, and additional laterals

BUY THE BEST.

If you want the best low down wagon you should buy the Electric Handy Wagon. It is the best because it is made of the best material: the best broad tired Electric Wheels; best seasoned white bickory axles; all other wood parts of the best seasoned white oak. The front and rear



ELECTRIC

hounds are made from the best angle steel, which is neater, stronger and in every way better than wood. Well painted in red and varnished. Extra length of reach and extra long standards supplied without additional cost when requested. This wagon is guaranteed to carry 400 lbs. anywhere. Write the Electric Wheel Co., Box 10, Quincy, Illinois, for their new catalogue, which fully describes this wagon, their famous Electric Wheels and Electric Feed Cookers.

will be run into the favored orange lands around Lindsay and Exeter. The ditch will run along the foothills to a point east of Lindsay, and will be twenty-four miles in length. It will bring fully 5000 acres of land in condition for irrigation, adding that much to the area now planted or susceptible of proper cultivation in the Lindsay or Exeter districts. It insures a great future for the growth of oranges in this part of the State. The adaptability of the soil and climate have been thoroughly demonstrated. Now that the other essential of abundant water for cheap irrigation is to be provided, what may we not hope from this favored region. W. H. Hammond of Visalia, president of Mt. Whitney Power Co., is also president of the Lindsay Land Co.; Capt. A. J. Hutchinson, who has a beautifully improved orange grove and residence site at Lindsay, is the local manager of the company. They represent a coterie of gentlemen who are doing much for the advancement of eastern Tulare county. H. G. P.

Forest Tree Seedlings.

TO THE EDITOR:—When I said my little piece to the PACIFIC RURAL PRESS I had no idea it would bring me any correspondence, but I find some of your subscribers very much alive to the need of planting forest trees. The trouble is how to get started right, whether to plant the seed where the tree is to grow or in the nursery, to transplant. My experience is very limited. I plant all large seeds, such as acorns, walnuts, etc., where I want the tree, and all small seeds in boxes and transplant to 4-inch pots, then to 8-inch, and then I have poor luck in land that cannot be plowed. I have a letter from a reader of the PACIFIC RURAL PRESS—L. A. Moore, Ashland, South Carolina—proposing to exchange seeds. Perhaps some other readers would like to exchange with him. ROBERT HASTIE. Clayton, Cal.

The Cowy Odor



which is so prominent in much of the dairy butter, and which is so offensive to many people, is the result of dirt; real fine dirt that can't be strained out. The Little Giant Separator takes out all the dirt, produces a perfect flavor and greatly increases the product. It is the safest, easiest cleaned, and requires less repairs than any small separator made. Send for Catalogue No. 31.

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GOOD LITTLE INCUBATORS

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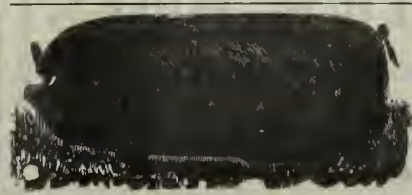
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\$100 in Gold

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will not cure. It does not change the hair and never makes a blemish. Excels in cases of lameness. Used and endorsed by Adams Ex. Co.

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Dear Sir:—We have used your Elixir for over five years for all horse ailments. We had a horse lame for over a year; two bottles cured him, and has not been lame since. Would recommend it to all.

Respectfully, M. F. JOSELYN & SON.

Tuttle's Family Elixir is equally valuable in the household. Cures permanently, rheumatism, sprains, bruises, etc., and instantly relieves pain. Sample of either Elixir mailed for 6c. in stamps—merely to pay postage. Either Elixir for sale at all druggists for 50c. Get our 100-page book, Veterinary Experience. It is actually worth \$10 but we will mail it to you FREE.

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Beware of all so-called Elixirs, none genuine but Tuttle's.

Breeders' Directory.

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HOLSTEINS.—Winners over Jerseys of every butter contest at State Fairs for five years. This year every butter prize awarded went to my herd except 2nd prize for 2-yr.-olds. Stock for sale. F. H. Burke, 826 Market St., S. F.

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A fine lot of young, Scotch-bred Short-horn bulls for sale in numbers to suit. For prices address

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Blood Will Always Tell.

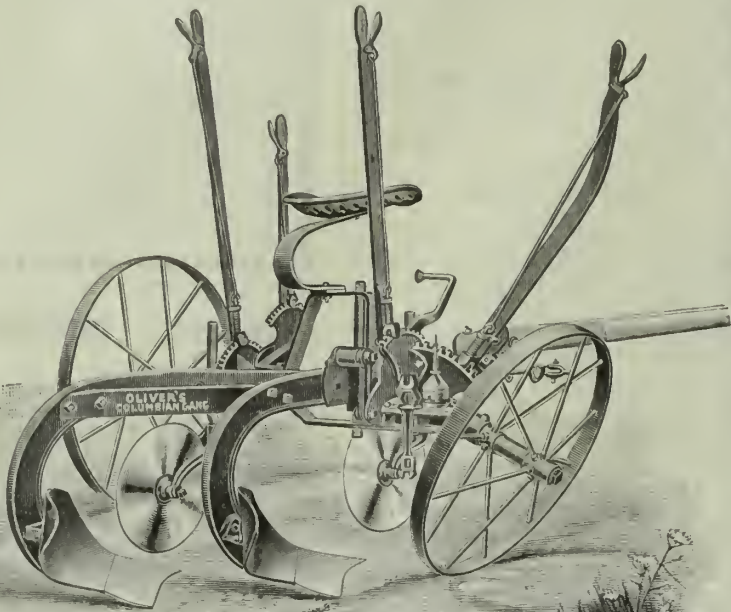
The Lynwood Herd of Swine have again been awarded the majority of premiums at the State Fair, although the competition was the greatest ever known and the exhibit much the largest. When you want something real choice that you can depend upon write **JAS. R. BOAL, Mgr., 125 W. 25th St., Los Angeles, Cal.**

Our Leading Farmers

SAY THE COLUMBIAN GANG PLOW IS ALL RIGHT.

PERMIT US TO ADD : : :

That this conclusion has been reached by them through actual trial of the plow in the field. : : : :



OLIVER'S NEW COLUMBIAN GANG PLOW.

The COLUMBIAN

Is no longer an experiment. Three years of hard, practical service on California farms has proved beyond a doubt that it is the best two-gang plow ever placed on this market.

: : : The Best Iron and Steel : : :

Are used in its manufacture, making it the strongest and most durable gang plow to be had.

The COLUMBIAN Saves Time, Labor and Money.

It will do more work with less horses, and do it better than any other wheel plow in California.

The COLUMBIAN

Is perfectly balanced, runs light, works splendidly and with marvelous ease to man and team.

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The Machine that will Build a Butter Trade.

Because it will make a superior quality of butter.

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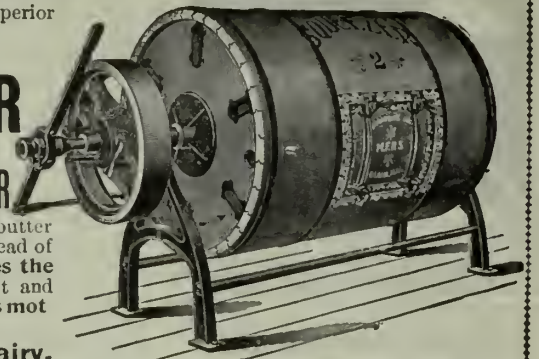
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squeezes the water and butter milk out of the butter instead of grinding it. It preserves the grain, distributes the salt and color evenly and prevents mold. It is

Made for the Dairy, and is easily operated and readily cleaned. No dairy should be without it.

Will do Exhaustive Churning at any Temperature.

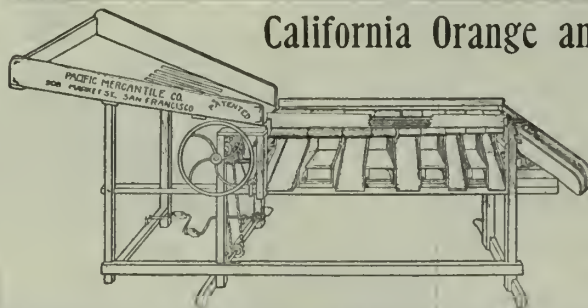
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 3.

SAN FRANCISCO, SATURDAY, JANUARY 20, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Inland Water Views.

The group of pictures on this page is not representative of the inland water scenery which chiefly fills the thought



A Mountain Flume.

and eye of the tourist or of the native pleasure seeker. Such scenery would comprise our peerless lakes, our majestic waterfalls and our broad valley rivers with their varied water craft. There is, however, an entirely different class of water views which embodies the industrial idea, and as a substitute for what it may lack in picturesqueness it offers the charms of service in the activities which bring wealth and comfort to mankind. Our pictures relate, then, to water diversion, storage and distribution as accomplished by men for industrial uses. They are, it is true, only a very few of the many phases of this effort. We have had many others in the past, we shall have many others in the future, and yet these, so far as they go, are characteristically Californian and therefore varied and interesting.

There are hundreds of miles of flumes

where water is particularly precious and where there is capital enough for permanent improvements, such flumes have been largely replaced by pipe lines, and this is a better method from all points of view, and yet the board flume has enabled the production of great value in the past and the board flume has still much service to render in the same line. In regions where mining has declined the old ditches and flumes still bring down water for foothill fruit growing and general farming and the early labors and investments of the miners have often ministered to the development of regions in ways which were not contemplated in the beginning. The music of the flume often greets the ears of the rambler in most secluded nooks of the mountains and may be the only token of civilization which greets his senses in the waste places.

Another group of water scenes in the



A Reservoir Near Georgetown, El Dorado County.



Flume to Take Water From Stanislaus River.

like that which is seen bringing water down a grade which transforms it into a troubled torrent within its narrow limits. Recently, in parts of the State

foothills and mountains consists of the ponds and reservoirs in which water is collected for distribution. There are all forms of surface excavations for this



A Pond in a Mountain Stream Bed.

The last view brings us again to the flume, but it is a structure which bears little resemblance to the hillside conduit with which we started. Here is a flume of colossal size, constructed with timbering of adequate size and with the best workmanship. It is said to carry 6000 inches of water, which is quite a little stream. Riding down the flume in this case is not a matter of mounting a board, but it may serve the methods of an ordinary roadway, as the picture shows.

CALIFORNIANS who are planting resistant vines to escape phylloxera will be interested to know that Cape Colony, South Africa, has been actively fighting this pest. The amount of compensation paid for the destruction of vineyards on account of phylloxera has been \$97,845.85. The amount paid for inspection of vineyards and attempted destruction of phylloxera has been \$301,679.20, and the amount spent on the introduction of American vines and all subsequent expenses connected therewith \$431,867.81. It has been found that American vines transplanted into the soil of Cape Colony are free from the ravages of phylloxera. Over \$35,000 have been spent in assistance to grape growers and for premiums on "fruit grown on American vines."

SECRETARY SHIELDS of the State Board of Agriculture gave out on Saturday the nominations for the stallion stake of 1902. Seventy-three stallions are named. The unprecedented number of entries assures it of being the richest event ever offered or contested for under the State Agricultural Society. This is the largest number of stallions ever entered in a stallion stake, the largest previous number being forty-eight.

It is announced that within a few months there will be established in Monrovia, Cal., a perfume farm and perfume manufacturing plant.

purpose, according to local requirements and the lay of the land. One of the pictures shows a small mountain swale or meadow which has been used for water storage by a cheap dam across its lower opening and the water lies in its sedge-grown bed, resting perhaps between its rapid rush from some altitude until it is required to make a second plunge for some industrial use below to find its way at length to some valley stream through which it may escape to the sea. A very different reservoir is shown in the third view, where the ground evidently prohibits broad expanse of surface and the alternate of length has to be chosen. This reservoir looks rather like a broad canal excavated along a contour line upon the surface of the hillside. This form of reservoir is probably the only one which the local topography favors, and it serves its purpose well. In this case it is essential that the excavation should hold its maximum content of clean water, and it is consequently kept clear of debris and water growths.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, January 20, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—A Mountain Flume; A Pond in a Mountain Stream Bed; A Reservoir near Georgetown, El Dorado County; Flume to Take Water from Stanislaus River, 33.
EDITORIAL.—Inland Water Views, 33. The Great Convention at San Jose; The Week, 34. Miscellaneous, 33-34.
QUERIES AND REPLIES.—Peaches or Plums; The Tokay and the Phylloxera; Plants for Dry Hillsides; Jersey Kale for Fowls; Self-Binding Hay; Sait Bushes for Bee Pasture; Wine Grapes for a Late Region; Resistant Vines, 35.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending January 15, 1900, 35.
AGRICULTURAL SCIENCE.—Bacteria in Agriculture, 36.
THE FIELD.—Turkistan Alfalfa; The Celery Crop, 37.
FLORIST AND GARDENER.—A Time and a Place for All Things, 37.
HORTICULTURE.—Weeds vs. Fertility, 38.
THE POULTRY YARD.—The Belgian Hare, 38.
AGRICULTURAL REVIEW.—39.
THE HOME CIRCLE.—Disappointment; A Change of Heart, 40.
The Tomato a Tonno; Little Things Worth Knowing, 41.
DOMESTIC ECONOMY.—Hints to Housekeepers; Prune Puddings, 41.
THE MARKETS.—Produce Market; Fruit Markets, 42-43.
PATRONS OF HUSBANDRY.—Grange Notes; Stockton Grange, 46.
CORRESPONDENCE.—Fruit Growers and the Nicaragua Canal, 46.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 44.

The Week.

There are good intervals for work between this winter's storms, and the result is that everyone who believes in being up to date with his field activities can achieve it. There is also the incidental advantage of not being obliged to pour barley down the throats of idle animals. Our advices are that planting, pruning, spraying and other orchard work is being rapidly pushed, and any one who goes abroad can see the color effects of the plowman upon the landscape. In spite of all the work there is plenty of talking going on, and it is generally larger talk than has been heard for a decade. Californians will sympathize with President J. W. Springer of the National Live Stock Association, which is in session this week in Texas, when he said:

We face with the twentieth century new questions, new responsibilities and rapidly extending markets. Conditions have forced our nation to abandon the Chinese wall policy, and we are to-day enjoying at home our greatest prosperity, while our foreign business for 1899 reached the unheard of figures of over \$2,000,000,000. The question that meets ambitious Americans as 1900 dawns upon them is: Shall we lead or follow? I speak for the greatest live stock association on the face of the earth when I say we believe in leading, not in following. Commerce is the backbone of a great nation, and the supreme contest to-day is for commercial supremacy. American enterprise, crystallized through American labor, and American products, is directing the ship of state to-day, and the best the earth affords is none too good for our people.

It may do, to bring this point home to our people, to note the fact that this week the largest shipments of flour ever known to go out from this port have been made to Asiatic ports. We are right in it, and on the right side of the world for it, too.

Fortunately spot wheat does not go to the lower levels where wheat futures are now found. Speculative wheat is a little better to-day but it has groveled since our last report in fear of the reports of large visible supply, etc. Barley is about the same as last week, but there is less poor barley offering now. Corn and oats are unchanged. Choice hay is moderately firm at the present low rates. Mill feeds are unchanged, but there is less pressure to sell. Beef is stationary but mutton is higher. The price of wool and the outlook makes sheep worth keeping for flock purposes. There is a good demand for small to medium sized hogs. Butter and cheese are unchanged; both are rather easy but choice holds up fairly. There is much butter below grade. Eggs have broken to pieces and the trade is demoralized. Small fowls are still high and scarce; old birds are neglected even though supplies are not excessive. Turkeys are low and slow and a good many coming in. Beans are higher and firm for white and Lima. Potatoes are in great supply, 25,000 sacks in one day, but they will probably work off all right. Onions hold up well. Apples are scarce for choice and

Eastern are on the way. Oranges are weak. The auction sales start to-day and they unsettle things a little in anticipation. Dried fruit is unchanged: stocks being firmly held and little doing. Sales of wool are being made ahead of shearing and a strong market is in prospect. Hops are dormant except for some fancy lots bought perhaps on speculation.

The Great Convention at San Jose.

As we go to press on Wednesday the great convention of fruit producers at San Jose is closing its labors and it is impossible to cover all details in such succinct report as we desire to present to our readers. These must come later and discussion of them will occupy our attention, but enough can be said now to show that the movement is fairly under way, with as fair auspices for success as the most enthusiastic could desire. The ultimate realization of the project still rests, as it must necessarily rest, with the decision of the individual growers in all parts of the State concerning the propositions which will be calmly presented to them at their homes by the earnest friends of the undertaking who ministered at its birth in San Jose.

The most obvious fact about the convention, perhaps, is its representative character. The attendance considerably passed the thousand limit. It was twice or thrice the attendance at the State Convention of Fruit Growers in last December. It was representative both in the horticultural character and standing of the delegates and in the geographical breadth of the area represented. North and south, coast and interior, valley and foothill—all were largely represented. The spirit of the assembly also was most gratifying. The confidence that the accomplishment in view was possible and that the right course toward it was chosen, gave point and strength to the whole procedure. In these respects the meeting was as good as could be asked.

The convention chose what seems to us the safest and most direct route toward success. It builded directly upon the broadest and most unequivocal success which California co-operative efforts have yet achieved, and that is the work of the raisin growers. It showed determination to proceed along that clearly blazed trail. It also decided to limit its field to dried fruits and nuts, which constitute a distinct class of products, and can, therefore, presumably at least, be collected under one administration and more intelligently and more successfully handled. Some disappointment was expressed that the fresh fruit products were not included, but in our opinion the restriction to canned fruits is better. Those who have thought of some vast concern which should handle all the fruit of the State in all its forms, have cherished an idea which may be some day realized, but we believe it will be more surely attained through the success of each branch by itself, which may point ere long to success for consolidation of them all.

The general plan of the organization is that outlined in the California State law of 1895, which provides for the organization of co-operative associations with provision for membership without shares of stock. The name is to be the California Fruit Growers' Association. San Jose was designated as the principal place of business of the Association, its term of existence to be fifty years, the management to be in the hands of a Board of Directors to be composed of eleven persons. The membership fee was fixed at \$5. The president and vice-president are to be elected by the members. The officers are to be generously compensated for their services—the president \$500 per month; the executive committee \$300 per month; and the directors \$10 per meeting and expenses. The convention readily assented to these figures in the full belief that the members would elect no men who could not earn this. The limit of liability which the directors can incur was placed at \$200,000, and this cannot be incurred unless 75 per cent of the producers sign a contract to place their fruit with the Association.

The signing of the contracts is of course the life and death point with the Association as at present projected, though of course procedure with less support can perhaps be arranged later. This is, however, the point which is now aimed at. The contract

to be signed by growers is, in outline, as follows:

It provides that the fruit grower shall, for \$1, sell and transfer to the Association an undivided interest equal to 2% of his ownership and interest free from incumbrance in and to all the crops of green or cured prunes, cured fruits and nuts now growing, or which shall be grown by him or for him, etc., during the years 1900 and 1901, in a specified county or on any other lands not described. In consideration of such sale therefor the Association agrees to undertake the inspection, packing and sale of the entire crop; to establish uniform grades of fruits and nuts; to make sales under its own trade mark and guarantee of quality, as speedily as possible and for the highest obtainable prices; and pending the sale to procure storage and cause the crop to be insured; to establish agencies, advance moneys, etc. The grower agrees to cultivate and care for the crops at his own expense and to cure and deliver the same satisfactorily. For all moneys advanced the Association is to have a lien on the crops. A failure to fulfill his part of the agreement entitles the Association to assume control and bring suit for reimbursement, if necessary. It is provided, however, that the grower may transfer any or all of his interest to any member of the Association or to canners for canning only for consumption green or for shipment green, beyond the State, or to any packer, who has signed a grower's contract with the Association, and covering the fruit so transferred, all of such to be immediately reported to the president of the Association.

We shall soon have the contract in full and final form so that our readers can carefully study its details. There was some discussion as to how much time could be given to the propaganda in which all delegates seemed anxious to engage in their several districts. It was finally decided that the canvass should close on April 1.

It was decided that Santa Clara should have five upon the board of directors upon the assumption that Santa Clara county has two-thirds of the acreage in prunes of the State. This acreage is placed at about 25,000 acres. Much time was given on Wednesday to the choice of these five, and it is not accomplished at the time we are obliged to close our forms. The six outside directors were chosen as follows: H. W. Meek, San Lorenzo; M. T. Kearney, Fresno; J. B. De Jarnett, Colusa; Charles Foreman, Los Angeles; Thomas Jacobs, Visalia, and W. E. Woolsey, Fulton.

It was unanimously decided that one of the directors will resign if the prune and deciduous fruit growers of Washington and Oregon will unite and come into the Association, selecting their director. In addition, the growers of the two States named are cordially invited to become members.

It was evident that the convention had no use for reciprocity treaties. During the session this message was sent to Senator Perkins: "The unanimous judgment of the California Fruit Growers' Association to-day assembled is that the pending reciprocity treaties are inimical to the best interests of California's great horticultural industry. We therefore earnestly protest against their ratification."

It is announced that the railways have made a concession to the southern California orange shippers. A carload destined for Chicago or Detroit or Boston or New York will be sent in a broad way by whatever route the shipper may designate. For example, he may demand that the car should be sent through Ogden, Omaha, Chicago, Detroit and New York, or that it be sent via El Paso, Fort Worth, St. Louis, Kansas City, Cincinnati, Washington, Philadelphia and New York. But the shipper will not be allowed to say by what roads the car will be forwarded after leaving the line of the initial carrier. The shippers have secured an ex-railway manager from the East to lead their fight.

The battle that has been raging at San Jose between the milk and cattle interests and the County Medical Society over the inspection of the dairy herds in Santa Clara valley has resulted in a temporary setback for the municipal authorities. By a vote of 4 to 1 the Supervisors have tabled indefinitely a petition signed extensively by the doctors and many other professional interests of San Jose for the appointment of a county veterinarian.

CONSUL SKINNER, at Marseilles, reports to the State Department that the olive crop in Italy, France and Spain is practically a failure and will hardly reach 30 per cent of the average. The failure has been caused by a fly, and the Consul says that the people make no effort to counteract the pest, but accept its operations as a dispensation of Providence.

QUERIES AND REPLIES.

Peaches or Plums.

TO THE EDITOR:—I have in Yolo county a lot of Foster peach and almond trees which I wish to work over. Some advise me to put in Clyman, Abundance and Satsuma plums for early shipment. I am inclined to put in more Hale's Early or Muir peaches, both of which have done well. What do you think about it?—OWNER, Philadelphia.

It is perfectly feasible to change over your Foster trees into other peaches, or to the plums which you mention. In grafting into old peach stock, however, a little extra care has to be taken, and better results are had with a side graft than with a split in the stump. The method has been published in the PACIFIC RURAL PRESS and in California Fruits. It being perfectly feasible, then, to work both kinds of fruit mentioned on the old trees, it is merely a question of superior commercial outlook which you have to decide upon. Our own notion would be in favor of the peaches, because you have the alternative of drying or selling to canners, while in growing the plums you mention you will be largely dependent upon the shipping trade. However, we are a little partial to peaches and our judgment may be biased by that general preference. Possibly those who are urging you to graft in plums have better knowledge of the situation than we have. Your almond trees can be satisfactorily worked into Muir peaches, also, if you desire, or into Hale's Early, if you wish to make more of that variety. Most plums will do well on the almond; about the only thing one has to look out for is not to undertake the apriocot on the almond, because that will not make satisfactory connection. There are some varieties of plums earlier than some of those you mention, and even more promising for shipping purposes. The Red June is a fine early fruit, probably the best of the early Japanese plums; Burbank and Wickson are, also, very satisfactory later varieties.

The Tokay and the Phylloxera.

TO THE EDITOR:—Will the Tokay grape resist the phylloxera? Some people say if you grow Tokays you have no need of the American vines. Can you plant a resistant vine where a non-resistant one has died? Is not night-soil good to protect a vine from the insect?—J., Sacramento county.

It is quite fully established by experience that the Tokay grape will endure attacks of phylloxera longer than any other variety of grape commonly grown for its fruit. It is not, however, a resistant vine because it has been actually killed out in many places in Napa and Sonoma valleys. A thoroughly resistant cutting can be planted in places from which a dead vine has been taken, but fertilization will not protect a vine which is liable to the attack of the insect. It may be that the material which you mention would have some effect in that direction, but as the French have been trying almost everything under the sun for the last quarter of a century and have not found anything which succeeded in driving away the insect it is not likely that this material would avail. In fact, this is probably one of the things which the French first of all would think of using. You can use a little fertilizer in the soil to give vigorous growth to the cutting, providing you thoroughly mix it well with the soil, but care must be had that very little is used. Of course, how much depends upon how concentrated the fertilizer may be, but great care must be used not to get fertilizer collected in the holes in which planting is to be done.

Plants for Dry Hillides.

TO THE EDITOR:—What can I plant on hillsides from which poison oak and other trees and shrubs have been cleared? They are too steep to irrigate.—J., Shasta county.

It is an exceedingly difficult proposition to find plants which will maintain their life during the summer time on the steep hillsides in your part of the State. The Tagasaste is a desirable forage shrub, which is used in the Canary islands for such situations as you have. It is possible, also, that some of the salt bushes distributed by the University would be desirable. You could get a winter growth, perhaps, of peas or rye, or both sown together, but that, of course, would require annual sowing. You do not say what your object is in covering the hills, but we imagine it is for forage purposes. Is it not, then, worth while to notice what native grasses and shrubs

are browsed by the stock and establish them, if possible, because they are probably injured by nature to the situation, and might be more satisfactory than any imported growth. There are some brushes which are acceptable to stock, and nature's planting of them may be better than anything man can do. It is sometimes a mistake to clear off rough lands in the hope of improving them.

Jersey Kale for Fowls.

TO THE EDITOR:—I have found Jersey kale excellent green stuff for poultry. I have old plants which will yield much seed this summer. Can I find a market for the seed?—SUBSCRIBER, Haywards.

We are very glad to hear of your success with Jersey kale. We have favorably commented upon the plant so many years and found it so satisfactory that it seems to us that the seedsmen ought to take it up as one of their regular supplies. It might be possible for you to make arrangements with some seed dealers and produce a crop of seed for them. They certainly can secure very clear testimony of the success of the plant and could make it a leading novelty for some forage purposes. Unless some such market can be developed there would not be much inducement to save a crop of seed.

Self-Binding Hay.

TO THE EDITOR:—I am thinking of using a self-binder to harvest my hay the coming season. The air is so dry in this locality that hay cures perfectly in the bundle and shock. Can I make a success when it comes to baling? I am afraid the bundles will not pack properly, like hay cut and put up in the usual way. I would like to ask if any readers of your valuable paper have had any experience baling hay cut and bound with a self-binder?—R. N. ATMORE, Piru, Ventura Co.

Nothing but the pudding test will answer this question. We have never tried it. Who has either succeeded or failed in baling bound hay?

Salt Bushes for Bee Pasture.

TO THE EDITOR:—Are the salt bushes which are advocated for alkali and for dry lands of any account for bees?—READER, San Diego.

We cannot tell much about the availability of the salt bushes for bee forage. The bloom is quite inconspicuous and we cannot find at this moment report of any observation as to the attitude of the bees toward the plant. This will have to be demonstrated by experiment, and as the plant is now widely grown, we would be under great obligation if advised of the results of observation.

Wine Grapes for a Late Region.

TO THE EDITOR:—Our rains usually begin the middle of October. Can you name two grapes for white wine and two for red wine which will ripen before that time, even in a late region?—GROWER, Santa Cruz.

The grapes which would seem to be the best for ripening at the season to escape your usual rains would be the White Semillon and Franken Riesling for white wine, and the Carignane and Mondeuse for red wine. These varieties are usually good bearers.

Resistant Vines.

TO THE EDITOR:—Is the Louisiana a good resistant vine? How does it compare with Lenoir?—VIGNERON, Sonoma county.

To the best of our knowledge the Louisiana is not a reliable resistant vine. It certainly is inferior to others which are now quite prominent, and is very much inferior to the Lenoir.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, January 17, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall to Same Date.....	Average Seasonal Rainfall to Date.....	Minimum Temperature for the Week.....	Maximum Temperature for the Week.....
Eureka.....	2.96	33.16	16.84	20.51	50	58
Red Bluff.....	.11	14.77	12.83	12.70	43	58
Sacramento.....	.18	13.29	7.85	9.53	38	53
San Francisco.....	.18	14.38	7.87	11.41	46	60
Fresno.....	.02	6.12	3.80	4.33	38	50
Independence.....	..	2.08	1.15	3.83	32	62
San Luis Obispo.....	..	12.41	6.87	8.07	38	76
Los Angeles.....	..	4.57	2.94	7.90	40	76
San Diego.....	..	2.60	3.43	4.24	46	70
Yuma.....	..	0.66	1.33	1.89	38	78

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 15, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

The week has been marked by generally cloudy weather over the greater portion of the State. Fair weather prevailed at the beginning of the week, and high northerly winds were reported from the southern valleys Monday and Tuesday. On Monday night some damage was reported in Riverside and San Bernardino counties. Frost was reported on the morning of the 11th generally throughout the State. Tule fog was general in the valleys north of the Tehachapi from the 12th to the end of the week. In northern California sufficient rain has fallen. Owing to the withdrawal of the ground water during the past two years all the rain which fell is probably needed. It is reported that some of the wells in the artesian district show a marked rise. In the Sacramento valley the rivers have been generally full, and at many places up to high-water mark, but no serious damage has as yet been reported. The river at Sacramento reached a stage of 26 feet on January 9th, and has remained above 29 feet during the week.

Conditions have been unfavorable for plowing and seeding in most of the northern valleys, especially on black lands, as the ground is too wet. Warmer, drying weather is needed in these localities. The fog and cold weather have retarded grain, and probably held back fruit.

No damage was reported from frosts on Monday, Tuesday and Wednesday nights. Early sown grain is in very good condition, and there is every indication of a large crop.

Budding of the vines has been retarded by the cold, foggy weather, but this is considered beneficial at this season.

SACRAMENTO VALLEY.

The precipitation was unevenly distributed, more rain falling in the northern portion than in the southern part of the valley. The temperatures were about 4° warmer than the normal for this period. On tule lands there was too much water to permit of farming operations. In the vicinity of Sacramento the river remained nearly the whole week at a stage exceeding 26 feet. No reports of serious damage, however, have been received. In general but little work was done by the farmers and fruit growers during the week. In connection with the tule fog, which prevailed during the last half of the week, it was noticed that on the uplands the temperatures were 8° or 10° warmer than in the lowlands. While it was foggy or cool on the bottom lands, there was sunshine at an elevation of 500 feet.

Some deciduous and citrus tree planting are going on. Stock feed is plentiful. Some few orchardists are making preparations for spraying trees. Grain is growing fairly well.

COAST AND BAY SECTIONS.

The weather has been generally cloudy during the greater portion of the week. The valley fogs have moved slowly westward to the coast. The rainfall has been very light, but the ground is well filled with water and there have been no drying winds. Pasturage is in excellent condition, and stock are doing well. There were light frosts at the beginning of the week, but no damage was reported. Farm work is progressing slowly. Some orchardists are preparing to spray trees. Owing to the bad condition of the roads, there is some difficulty in obtaining fuel at some points. Early sown grain is growing nicely. Feed on the ranges is of excellent quality, and stock are reported to be fat and healthy. Some farmers are pruning, and burning brush. All growing crops are doing well.

SAN JOAQUIN VALLEY.

The weather during the week has been moderately cool, and on the whole beneficial for all growing crops. While no rain has fallen, fogs have prevailed, and there has been no loss of moisture. Grain seeding is at a standstill, and grain, where up, looks well. Green feed is abundant. The cold, damp weather has retarded the budding of vines, but this is considered to be advantageous. The ground in many places is in good condition, and in other places, particularly in the northern part of the valley, too wet to work. Pruning is progressing in vineyards.

SOUTHERN CALIFORNIA.

The weather during the week has been generally warm and favorable for all crops. The temperatures were generally about 5° above the normal. No rain fell during the week. Heavy rains during the preceding week, however, furnished a good supply of water. While not needed, more rain would be welcome to supply the ground with water. High northerly winds prevailed on Monday and Tuesday, and some slight damage is reported in San Bernardino, Redlands and Highlands; some fruit was blown from the trees. Frost occurred on the mornings of the 10th, 11th, 12th and 13th. The end of the week was marked by coast fog. As a rule, the days have been warm with cool nights. Vegetables and grain crops are doing well; pasturage is good. Oranges are coloring rapidly. The celery crop is reported to be large and of good quality. Early sown grain is in good condition.

LOS ANGELES SUMMARY.—Soil is in good condition for working. Plowing and seeding being rushed. Fair, warm weather favored the growth of all vegetation; grain pasturage made rapid growth. Winter work is progressing in orchards.

EUREKA SUMMARY.—The ground remains too wet for plowing. Rains have been unusually warm, and the winter most favorable ever known in this county for stock.

AGRICULTURAL SCIENCE.

Bacteria in Agriculture.

By PROF. A. J. McCLATCHIE of the Arizona Experiment Station at the Institute Farmers' Club at Pasadena.

The aim of this paper is to make a slight contribution to a subject concerning which very much has been said and written during the past decade. The word bacteria is becoming a household one. After having been neglected for some thousands of years these little organisms have at last been receiving the attention due them. You have all heard and read so much concerning bacteria that it will not be necessary to devote time to a recital of the elementary facts concerning them. These facts are coming to be known by all classes.

LEADING CHARACTERISTICS OF BACTERIA.—I shall take it for granted that you understand that bacteria are microscopic plants, and not wriggling, squirming animals, going about seeking whom they may devour; that they are of the simplest structure, being principally spherical, elongated or rod-like; that so minute are they that they readily pass through the pores of many solid substances; that they are practically omnipresent; that the various species have different characteristics—some requiring oxygen, for example, while others do not; that they multiply with enormous rapidity by fission; that their food supply must, as a rule, be free from acid; that, besides food and moisture, they require a proper temperature for growth; and that as they grow they produce a great variety of chemical changes. I shall omit a discussion of these interesting features of the subject and shall pass on to a brief discussion of some of the work done by these organisms.

BENEFICENT BACTERIA.—Bacteria are in agriculture to greater extent than is commonly realized. But for their presence the farmer would soon find himself without an occupation. To be sure, a few bacteria have learned bad habits and behave in a shameful and destructive manner, but the majority of them are the farmer's most industrious assistants. It is of these helpful ones that I shall speak especially.

Success in agriculture is based upon fertility of the soil. The soil's fertility varies with the plant food it contains. This plant food consists of a few elements, of which the most variable and the most expensive to replace, if exhausted, is nitrogen. While several elements are indispensable to plant growth, among which are phosphorous and sulphur, as well as nitrogen, the latter may be considered the most important one. It is a prominent and indispensable ingredient of protoplasm, the living substance to which all the constructive and destructive processes of plant life are due.

Nitrogen is used by plants chiefly when combined with oxygen and hydrogen to form nitric acid, or when the hydrogen of the acid is replaced with a base to form a nitrate. Nitric acid is formed in the soil by the addition of oxygen to nitrous acid, and the latter by the union of oxygen with ammonia. Ammonia is formed by the combination of hydrogen with nitrogen. The chief source of nitrogen in the soil is humus, the remains of decayed plants and animals.

The steps, then, in the formation of nitric acid, the most important part of a plant's diet, are (1) the setting free of nitrogenous matter by the decay of organic bodies that fall upon the soil; (2) the formation of ammonia by the union of nitrogen with hydrogen; (3) the formation of nitrous acid by the union of oxygen with ammonia, and (4) the further oxidation of nitrous acid to nitric acid. Thus from organic matter must be formed an inorganic compound before the nitrogen contained will be available to plants. Nitrogen can be used by crops neither directly from organic matter containing it nor in a free state. It can be taken only from one of the organic compounds. The agent or agents that produce these changes from dead organic matter to mineral compounds must be very important to the farmer—how important we will now consider.

THE PHENOMENA OF DECAY.—It is now well known that all decay is due to the activity of various species of bacteria. A forest tree, an animal or an herb falls to the ground and is very soon attacked by myriads of organisms that ultimately bring about entire dissolution. This action upon fallen foliage and other parts of trees and smaller plants has caused the accumulation of the humus formed in soils when the forest cover is cleared away. The changes in the manure pile and the compost heap, the decay of stubble, of weeds and of green plants covered by the plow of the farmer are further examples of the desirable changes that occur as the result of the activity of decay bacteria. But for this disintegration of dead organic matter the earth would eventually be overlaid with lifeless forms of plants and animals and vegetation would be entirely choked out.

As this decay progresses various substances are liberated, the most important of which is the nitrogenous matter. As this is done a certain species of bacteria by its activity causes hydrogen to combine with the nitrogen to form ammonia. That this gas is being formed is readily detected wherever manure

or other nitrogen-bearing substances are undergoing decay. This work is done, so far as is known, by a single species, *Bacillus mycoides*. This organism, according to Wiley, grows only between 40° and 105° Fahr., its greatest activity occurring at about 85° Fahr. It requires oxygen and a slightly alkaline medium in order to develop properly. As the ammonia is formed by the bacillus just mentioned so much of it as does not escape is acted upon by another species that causes oxygen to combine with it to form nitrous acid. A third bacillus acts upon this acid, changing it to nitric acid by the addition of more oxygen. Thus it will be seen that all the changes from organic matter to nitric acid, the compound from nitrogen is used by plants, is brought about by the action of certain species of bacteria.

NITRIFYING BACTERIA.—These organisms (called nitrifying bacteria) require certain conditions in order to be sufficiently active to accomplish their work rapidly. These requirements are warmth (70° to 100° Fahr. being most favorable), moisture and air. Certain substances are also required for food, phosphoric acid being one of them. Hence their activity is greatest during warm weather in a properly aerated soil containing sufficient moisture and phosphoric acid and a small amount of alkali.

If, however, the activity of the nitrifying bacteria is sufficiently great to form nitric acid more rapidly than it is used by plants, the acid combines with a base to form a nitrate. Nitrates, unlike other salts furnishing plant food, are highly soluble and consequently are readily leached out of the soil by rain or irrigating water. Saltpeter farming, as practised in southern Europe and southern Asia, was based on the principles just set forth. By producing the proper conditions for the activity of the nitrifying bacteria, and by adding ashes to furnish the potassium, as well as furnishing a cover to prevent leaching, saltpeter (potassium nitrate) was obtained from the refuse from towns, barnyards and pastures. Likewise the beds of sodium nitrate (commonly called Chile saltpeter) are believed to be deposits due to the activity of nitrifying bacteria in masses of marine vegetation that had been lifted to the present level by an upheaval of the land. The region being rainless, no leaching away occurs. Thus not only is the nitrogen of decaying organic matter being made available to plants continually by bacteria, but through their agency during past ages large quantities of valuable plant food have been stored and are now available for increasing the output of the farm.

LOSSES OF NITROGEN.—If, then, there were no losses of nitrogen in any way through the action of bacteria, the same supply could be used over and over again, and this element of plant food would remain undiminished. But this is not the case. Most of the use of nitrogen compounds in the arts and sciences withdraws nitrogen from the plant food cycle. Whenever a plant or other substance containing nitrogen is burned free nitrogen escapes as organic matter decays. Likewise nitrogen compounds are continually being carried into the ocean, whence only a small percentage returns to land plants.

A fifth cause of loss of nitrogen is the action of a group of bacteria that have the power of decomposing nitrates and liberating free nitrogen. They also feed upon organic matter with the same result. These organisms are called denitrifying bacteria. They grow in the absence of oxygen and hence thrive in a wet, poorly ventilated soil. Thus a condition that is unfavorable to the activity of nitrifying bacteria is favorable to the growth of denitrifying ones.

NITROGEN-FIXING BACTERIA.—If these losses were occurring continually, were not compensated for in some way, the supply of nitrogen available to plants would gradually decrease until entirely exhausted. For the nitrifying bacteria, already discussed, add nothing to the supply, simply returning to plants nitrogen once used by them, while through several agencies part of it is being constantly returned to the atmosphere. It is through still another group of bacteria that the farmer is indebted for the averting of such a calamity. The bacteria of this group have the power to cause free atmospheric nitrogen to unite with other elements to form plant food. They are called nitrogen-fixing bacteria. Some of them, since Berthelot's experiments, are known to live free in the soil and fix nitrogen from the air-mixed therewith. There is little doubt that these organisms assisted materially in providing for the other plants on the earth in the early ages the nitrogen they needed. It is obvious that the nitrogen essential for the first life on the earth must have been furnished through some other agency. It is believed that electrical discharges then caused, and still cause, the combination of small amounts of nitrogen with oxygen and hydrogen to form nitric acid. But, judging by what is known at present, it seems fair to conclude that early vegetation was indebted largely to their cousins—the bacteria—for getting a start in the world.

But more important than the free nitrogen-fixing bacteria are those that attach themselves to the roots of one family of plants. You are all familiar with the discovery of Hellriegel, twelve years ago, that the nodules that had been observed on leguminous plants for many years contained and were due to bacteria that had the power to seize and fix atmospheric nitrogen, not only for their own use, but for

the use of the plants whose roots furnished them a lodging. Since this discovery peas, beans, clover, lupines and other members of the legume or the pea family have been appreciated as never before. It seems obvious that to the symbiotic relationship that has existed between these plants and their nitrogen-fixing tenants during past ages is due the existence of much of the plant food found in virgin soils.

APPLICATION OF THESE FACTS.—Thus far I have been simply stating facts and calling attention to biological principles, without stopping to point out their practical bearing upon the problems that confront the farmer in his every-day work. It is important that we have definite knowledge before we act along any line. A knowledge of the principles underlying the growth of crops is very important to farmers. Simply the acquiring of information is often sufficient to stimulate thought and suggest to a farmer many ways in which he can improve his methods. As the foregoing facts have been presented, no doubt those to whom they are new have been making practical applications of some of them. The applications that might be made to every-day farming are so numerous that it will not be practicable to suggest all of them. I shall call your attention to a few.

THE BACTERIA OF THE MANURE PILE.—The manure pile is a place of great bacterial activity—activity that may result in the loss of much valuable plant food. Various methods have been employed for preventing this loss. One method is the application of water, which not only lowers the temperature but partially excludes the air, and thus prevents too rapid formation of ammonia. Or an absorbent of ammonia may be added and its escape from the pile thus prevented. Gypsum has been much used for this purpose, also kainit and superphosphate. According to the experiments of Muntz and Girard, all things being considered, there is no better absorbent than dry earth well supplied with humus.

But probably the most practicable way of securing from manure all the plant food it contains is to apply it to the soil fresh and turn it under at once. According to experiments in the Northwest, the best depth to cover it is about 4 inches; but in our region it should be covered deeper. The lighter the soil the deeper it should be covered.

BACTERIA IN THE SOIL.—The fact that nitrifying organisms require oxygen emphasizes the importance of proper tillage. If nitrification cannot proceed a crop may starve, though there be an abundance of nitrogen in the soil. The deeper rooted the crop the more important is deep tillage. The bacterial effect of subsoiling (which results, among other things, in subsoil ventilation) in the case of sugar beets illustrates this point.

The fact that low temperatures restrain the growth of bacteria explains why the application of such a nitrate as Chile saltpeter produces greater results upon winter grain crops than upon summer grain crops. During warm weather the formation of nitric acid may be as rapid as necessary for the growth of the crop, and consequently the addition of nitrate a waste. In fact, in our climate nitrification is often too rapid during part of the year, resulting in depleting the soil of its nitrogen. For, as has already been stated, the products of nitrification are very soluble and soon disappear from the soil. Land occupied by a rapidly growing crop needs, as a rule, thorough aeration, while in our climate uncropped land often needs a cover to prevent loss of nitrates. At all times soil should be prevented from becoming too wet and compact, lest denitrifying bacteria cause the loss of free nitrogen.

The fact that nitrifying bacteria require a slightly alkaline medium in which to grow has led to the liming of land in some parts of the United States. Where a soil is acid, as is often the case in the Northeast, the addition of an alkali promotes nitrification and results in an increased yield. For this purpose lime has been used quite extensively. In our section, where alkaline soils are the rule, there is little if any need of liming.

Berthelot's experiments with nitrogen-fixing bacteria that live free in the soil have been followed by attempts to improve soils by inoculating them with pure cultures of these organisms, the theory being that increasing them in the soil would result in greater productiveness. A preparation purporting to be a pure culture of a nitrogen-fixing organism is made in Germany and sent out under the name of "almit." Many experiments have been made with the preparation, but few practical results seem to have been obtained. Since these organisms are usually present in soils and multiply with great rapidity under proper conditions, it would seem probable that better effects could be secured by producing conditions favorable for their growth than by increasing their number by adding them to the soil.

NITROGEN-GATHERING PLANTS.—The most effectual method of adding nitrogen to soil through bacterial action is the planting of crops whose roots serve as congenial hosts for the nitrogen-fixing organisms. In each locality a different legume or set of legumes will be best suited for this purpose. In the warmer States one class can be grown during summer and one during winter. In southern Arizona our summer legumes are cow peas and soy beans; our winter ones, melilotus and peas, besides the perennial alfalfa. For-

fortunately for agriculture, in each section of the United States one legume at least is raised as a hay crop. In the Northeast it is clover, in the Southeast cow peas, and in the West alfalfa. Furthermore, the legumes in the native vegetation, owing to the survival of the fittest, are distributed in our country in accordance with its needs. In the West, where meteorological conditions cause a rapid loss of nitrogen from the soil, legumes are much more abundant, and consequently are adding more nitrogen to the soil than in the remainder of the United States. Since, as has already been stated, to nitrifying and nitrogen-fixing bacteria phosphoric acid is an especially important food, its addition to soil not well supplied with it, and in which a legume is to be grown, benefits crops in two ways.

As all soils do not contain in abundance the bacteria suited for growing in the roots of all legumes, experiments have been made with pure cultures of suitable ones. A firm in Germany is sending out preparations called "nitragin" for inoculating soils to be sown to various legumes. Theoretically the plan is logical, but practical results have not always followed the use of "nitragin." The most successful experiments were made about two years ago at the Alabama Experiment Station. It is to be hoped that this method of increasing the fertility of the soil will yet be put upon a practical basis.

IN CONCLUSION.—A consideration of the facts presented in the foregoing will show that to bacteria the farmer is indebted for all that he produces upon the farm, since they contribute an essential element of all his products. Though bacteria kill, through infectious diseases, a few of his cattle and blight a few of his plants, these organisms nourish all his cattle and all his crops while alive.

THE FIELD.

Turkestan Alfalfa.

TO THE EDITOR:—The annual report of the Secretary of Agriculture, Hon. James Wilson, contains the following account of this new plant:

The unusually severe winter of 1898-99 killed off probably half of the alfalfa of western Kansas, Nebraska, Colorado and Wyoming, and many fields in the central prairie States to the eastward were badly damaged, but the Turkestan alfalfa grown in the States mentioned was not affected. At the Wyoming Experiment Station a plot of Turkestan alfalfa was exposed for two weeks without injury to a daily temperature of 35° F., the lowest point reached being 45°. In California it was subjected without damage to a drought which seriously injured ordinary alfalfa. In view of the notable success of this plant in withstanding drought and cold, it has been decided to purchase a large amount of seed grown in America from our imported stock and distribute it widely over the arid West until it has been thoroughly tested under all the different climatic and soil conditions existing in that region. From the results already secured, it is believed that this one introduction will add millions of dollars to the annual hay product of the United States.

At the experiment station at Brookings, South Dakota, with a minimum temperature last winter of 40° below zero with the ground bare, the common alfalfa was killed, while this alfalfa from the heart of Asia came through unharmed.

HOW THIS PLANT WAS FOUND.—One of the main instructions of Secretary Wilson in sending the writer on this trip, in '97-98, of nearly ten months was to secure if possible a hardy, drought-resisting leguminous forage plant from the elevated tablelands of Asia. Upon reaching Russia the Government agricultural authorities at Moscow and St. Petersburg told me of this plant. It is distinct from common alfalfa, which has come to us largely from Spain. Botanically, the difference is expressed by Russian authorities in naming Turkestan alfalfa *Medicago Sativa Turkestanica*, while common alfalfa is called *Medicago Sativa*. I learned, especially from Prince Massalski, of the Department of Agriculture at St. Petersburg that it had been found in parallel experiments east of the Caspian sea, in the Merv oases in Russian Turkestan, that the native alfalfa was vastly superior to the common alfalfa, especially where there was a lack of water, as it was able to give satisfactory crops with a minimum supply of water—a supply of water so small that the European (common) alfalfa perished from drought.

ITS RECORD IN RUSSIA.—Prince Massalski, of the Department of Agriculture at St. Petersburg, writes (in the *Industries of Russia*, Vol. III, p. 459):

Lucerne clover, *Medicago Sativa*, var. *Turkestanica*, is the chief fodder produce in use throughout Central Asia, and to the settled population of Turkestan is of the highest importance, since during the summer it forms the chief, and in winter, prepared in the shape of hay, the only fodder for cattle. It is of all the greater importance because within the region populated by settled inhabitants there are no meadows. Soft herbs and other grasses that grow up in the early spring in certain parts of the steppes are quickly dried up by the hot rays of the sun, and give place to coarse, prickly stubble, or in any case to less nutritive grasses, that are in general unfitted for sheep, camels or steppe cattle, and still less fitted for horses or the cattle of those who are settled in the oases, and are thus closely confined to the forelands

or rivers and in most cases are far removed from the steppes.

Prince Massalski describes the native methods of cultivation and irrigation, and continues:

The native lucerne would seem to be a cattle fodder that cannot be replaced in countries so dry and hot as Turkestan and the Transcasian province. Parallel experiments that have been made in the Merv oases, in the Transcasian province, in sowing French and native lucerne, under widely different conditions of water supply, have shown that the native lucerne, particularly where there is a lack of water, is vastly superior to the French in the crops it yields, and that it is able to grow satisfactorily with a minimum supply of water, a supply so small that European lucerne would perish from drought. This peculiarity of the native lucerne is to be explained by its peculiar formation. It possesses a very large root system, and its leaves are covered with thick down; this, in conjunction with a deep-cut orifice on the leaf, enables the plant on the one hand to imbibe the moisture from the deeper layers of the soil, and on the other hand to exhale it in very small quantity.

Along the Volga river, at the dry region experiment stations of eastern European Russia, I found this plant doing well, and when I got to the desert and semi-desert regions of Turcomania, Bokhara and the Semiretchinsk province of Russian Turkestan, all east of the Caspian sea, I made careful study of the plant. Here were camels by the thousands, and clouds of dust often so thick that a wet sponge was found essential for relative comfort in breathing. I was so pleased with what was seen of this plant that I did not stop until fully 18,000 pounds of the seed was secured, chiefly from the cotton-growing sections among the Sarts or native Mohammedans.

NORTHERLY LIMITS OF THE PLANT.—The main reason for making the overland journey of over 2000 miles (1300 by wagon, 700 by sleigh) from Tashkent, the capital of Russian Turkestan, to Omsk in Siberia, via Kuldja in western China, was to trace this plant to its northern limits, which was found to be near Kopal in Siberia (Lat. 45° 10', Long. 79° east of Greenwich). Kuldja, in Sungaria, western China, is in Lat. 43° 50', Long. 81° 20' east, and was the farthest point reached in my journey (about half way around the globe). Seed was secured from eight different sources, but of course only small lots could be obtained from the places visited in the overland journey. The interesting, and to us the most surprising facts, is that the alfalfa which proved so hardy at Brookings was from the cotton section of Turkestan; so the plant stands cold as well as drought. This indicates that in this plant we have an alfalfa that will be hardy to our northern borders and probably north into Canada.

It is gratifying to the writer that the rough journey in Asia, in which the shadow of the death angel's wings fell upon him more than once or twice, has apparently resulted in giving to the Northwest, as well as the Southwest, the hardy forage plant desired by Secretary Wilson.

It will be well to note that I have no seed of Turkestan alfalfa to sell or give away. All the seed was distributed from Washington, and the U. S. Department of Agriculture takes care of all applications. To those who lost their alfalfa fields last winter it will be good news that there is in existence an alfalfa hardier than the one cultivated in America, which was brought over by the Spaniards. The original home of the alfalfa from Spain, in southern Europe and Asia, appears to have been warmer and moister than that of this new introduction. The word alfalfa is Spanish and is derived from the Arabic.

N. E. HANSEN.

¹ Agricultural College, Brookings, South Dakota.

The Celery Crop.

We have frequently alluded to celery growing on the peat lands of Orange county. In this section the industry, according to the *Fruit World*, has grown from sixty acres planted in 1892 to 800 planted this year, and as the land produces a carload to the acre, the output of the crop will amount to 800 cars, valued at about \$120,000 to the growers in the field. The vegetable never reached a better form than it has this year. There is now being sent out an average of nine carloads per day, and this is reaching all important markets in the country.

Celery growers receive from \$100 to \$175 per acre for their crops in the ground, a profitable harvest, which has forced the value of the land up to from \$300 to \$500 per acre. The land is principally owned by men who own fruit ranches about neighboring towns, and who go to the peat lands in the fall for the short time required to grow the crop. During most of the year the peat lands are well nigh uninhabitable on account of their boggy nature, being swampy in the driest summers.

During the celery season the scene presented is a novel one. The horses are required to wear great shoes, after the principle of snowshoes, to prevent their sinking in the boggy land. There were 6,000,000 celery plants set out this year, and in the planting season men, women and children are employed.

The peat lands are six miles square, there being 1500 acres on which celery can be grown, the indus-

try having now attained over half of its possible output on the peat lands, while the growing demand for the vegetable for winter consumption indicates that the maximum production will soon be reached.

The distribution of the crop is effected through a half dozen large firms, mostly engaged in the fruit trade, who buy the crop in the field, harvest it themselves, and ship in compliance with market demands.

The peat lands are especially adapted to celery growing, because of their matchless fertility. For unknown ages the decomposed vegetation has been accumulating in the bog, until they have made a deposit of pure vegetable mould dozens of feet in depth.

After the little plants are set out the earth is kept banked up against them during growth, to promote the tender characteristic and preserve the whiteness which combine to make the plant the succulent food so highly cherished. The harvesting is done with a cutter especially designed to sever the plant from roots, and it is then plucked by hand, and it is trimmed and placed in crates in the field.

That it would be possible to grow more than one crop on the ground each year is certain, but freight rates to the East prove a barrier to shipments, as of most vegetables, except when the market is at the highest point, thus limiting shipments to the winter months, beginning in time to meet the Thanksgiving trade.

FLORIST AND GARDENER.

A Time and a Place for All Things.

TO THE EDITOR:—I was much pleased with the very interesting article that was written by Miss Annie Eliza Bates of Santa Barbara, which appeared in the *PACIFIC RURAL PRESS* of October 7, 1899. It shows what can be done in the same line by other young girls in California, provided they have the push, pluck and perseverance that she evidently has. I know something about the climate of Santa Barbara, as I lived near there from September, 1868, until October, 1870, and carried on the dairy business.

DIFFERENCE IN CLIMATE, ETC.—Now, there is a wonderful difference in the climate between Santa Barbara and this part of the country. I have often told my family and friends that a person could have green peas, asparagus, as well as other early vegetables in Arizona for their Thanksgiving and Christmas dinners, and by coming north very gradually could feast on the same every week, and finally eat their last mess in the extreme northern part of the State late in the fall. The fact is, in my opinion, there is a greater diversity of climate in California than in any other State in the Union, owing, in a great measure, no doubt, to its great length from north to south, over 700 miles, if I remember rightly, as well as to the mountainous character of the country, more especially in the northern part of the State.

Time of planting in Santa Barbara: Miss Bates, for instance, planted her first beans October 13th, first peas the 14th, and potatoes the 15th, and planted Mammoth sweet corn January 27th.

Time of planting here: After a practical experience of seventeen years in raising vegetables on my rich bottom land, I find that the latter part of January and the first part of February, in ordinary seasons, is the best time to plant peas of different varieties; but for a succession, they can be planted at short intervals, especially the dwarf varieties, up to the 1st of April. Some Italian gardeners near me planted half an acre or more of Yorkshire Hero peas last season on the 24th, of December. I told them it was altogether too early for their ground, although it was much lighter and dryer soil than mine, and that I would not plant my peas until the first week in February, and I thought I would have as early peas as they would and a much larger crop for the amount of land planted. The result was as I anticipated. All of their vines were very badly frozen several times, when the temperature for a few nights was 20°, 21°, and 22°, and very many nights afterwards 28°, 29° and 30°. I do not think they gathered more peas from their half acre or more than I did from one-eighth of an acre. However, friends of mine who live but a very short distance from me on the hillsides, and some of them not over 60 or 80 feet above the valley land, have good success in ordinary seasons in raising peas planted early in the fall, or as soon as the ground gets a good thorough soaking. Their soil is very much lighter than the valley land, and many places quite gravelly and shallow, and, being on the hillside, admits of natural, thorough drainage, while the valley land does not. My well is situated on the highest land on my place, the water in it to-day, January 4th, is only 30 inches from the surface, and even less on many portions of the land, and it consequently keeps cold and wet in such a season as this until late in the spring. It is therefore best to wait until the ground gets just in the right condition to work before planting seeds of any kind for, in my judgment, vegetables of any kind, as well as fruit trees, don't like "wet feet." It is for this reason that I approve of raised beds, made light and friable with very fine

horse manure, leaf mould, sand, etc. They can be worked to good advantage a few days after a heavy rain, and two or three crops can be raised on them in one season without irrigation.

BEST KIND OF PEAS.—In answer to those who wish to know what variety of peas I consider the best, allow me to say, if I was obliged to be confined to two varieties only, I would choose Nott's Excelsior, and Carter's Stratagem. The first named is a dwarf variety and will bear liberal manuring; it is an excellent early pea as well as very prolific. Carter's Stratagem is what I call a half dwarf, bears fine large, long pods, and plenty of them, well filled with large wrinkled peas of superior quality.

Instead of planting beans October 13th, potatoes the 15th, and sweet corn January 27th, as it seems Miss Bates did with good success, I am obliged to delay the planting of beans and corn until the last week in April, or up to May 10th, and even then they sometimes get frosted a little. Potatoes can generally be planted in February and March.

LOCATION.—It will be seen by the foregoing that location has a great deal to do with one's success in raising vegetables, fruit, etc. Any one who is the least observing will learn sooner or later, by dear-bought experience perhaps, just how, when and where to cultivate their land in order to secure good crops of grain, fruit, vegetables, etc. We have had here and in the immediate vicinity up to this date over 26 inches of rain, and most of the farmers in the valley have been unable to put in but very little grain, while in the foothills surrounding us planting and seeding can be carried on soon after a heavy rain.

Calistoga, Cal., January 4. IRA W. ADAMS.

HORTICULTURE.

Weeds vs. Fertility.

TO THE EDITOR:—The question of fertilizing our orchards is coming to be of such importance that to know just how much benefit can be derived by plowing in the weeds is of great interest to every orchardist. Many seem to think that weeds take not only their sustenance from the soil, but also take from the soil the water that would remain in the soil and benefit the trees, had not the weeds taken it.

While this may be true in theory, can it be proven by practical demonstration? The soil in many orchards, by cultivating in the winter while wet, and all vegetation kept from growing, has got into a lifeless condition, and has to be worked while wet or else it can not be worked at all. This condition of things must be alleviated or else many orchards will ultimately be ruined.

Nature has in this valley furnished a remedy which if properly used would in great measure prevent the impoverishment of the soil and assist in restoring it to its original fertility, but the average orchardist has persistently refused to allow the weeds and burr clover to grow, although (like truth, that, crushed to earth, will rise again) they have persisted, after being bruised and crushed, in sending out more shoots, as much as to say to the orchardist, "If you will only let us, we will infuse into your soil new energy and life; will cause your trees to grow with such strength as to give you abundance of crops, and a well-filled pocketbook."

BENEFITS OF WINTER WEED GROWTH.—We will leave out chemical analysis of weeds and clover and consider what effect they have upon the soil in the light of practise and observation:

1. We find they fill the soil with fibrous roots. When these roots decay each one of them leaves a little cavity, into which air and water can penetrate, and thus greatly help in pulverizing the soil. When the tops are turned into the bottom of the furrow they keep the soil loose and open, enabling the air and heat to permeate the soil, and by permeation give heat and moisture.

2. Do weeds draw from the soil more fertility than they give it? I will ask. Did any one ever know of land that had been abandoned to weeds a number of years lose any of its fertility? On the contrary, did it not grow richer in plant food? If weeds growing and ripening seed upon land year after year, with no cultivation, do not exhaust the soil, why should they exhaust the soil in our orchards when plowed in before ripening?

3. Do weeds draw more moisture from the soil than they add to it? Last year and the year before I thought I would make a test for my own satisfaction. Both being dry winters, I had no difficulty in digging to the dry dirt. I dug down where the ground had been kept bare of weeds by cultivation, and in another place where the weeds were at least 18 inches high and as thick as well could be. The soil where the weeds were was wet down fully 3 inches deeper than where there were no weeds. I made similar tests at different times and places during the two winters, with like results every time.

HOW WEEDS CAPTURE MOISTURE.—A little reasoning, I think, will explain this. During the time the weeds are growing we have heavy dews and fogs. We find in the morning water dropping from the

trees and weeds; underneath them the ground is wet, and often will remain wet a few days, while where there are no trees or weeds there is scarcely any moisture from dew or fog, and what little there is is soon evaporated by wind or sun.

Thus the weeds not only take the moisture from the atmosphere and convey it to the ground, but also protect it from evaporation, thereby adding much more moisture to the soil than they take from it. Where there are heavy crops of weeds the ground remains wet later in the season, necessitating later plowing. It will also be longer drying out.

To get the best results, weeds should be allowed to grow until late in the season, and plowed under before they are too near ripe. What would be meat to the orchard in winter and spring would be poison in summer.

Berryessa, Santa Clara Co.

[This is a very excellent statement of a very important matter; but note particularly the last paragraph. Do not allow the weeds to grow too late. If allowed to remain too long they pump out the moisture at a frightful rate and make it impossible to get the soil into good moisture-conserving condition by summer cultivation.—Ed.]

THE POULTRY YARD.

The Belgian Hare.

By C. C. CHAPMAN of Placentia, at the University Farmers' Club Institute at Pasadena.

The latter part of the nineteenth century has proven most prolific in important discoveries. Among those of real practical worth and which we believe will take rank along with the leading discoveries of an economic nature, is the Belgian hare. We affirm that the utilization of the hare for food purposes and for the gratification of fanciers entitle it to be classed with those splendid discoveries which make for the comfort and welfare of people living under the conditions which the civilization of the age has brought to us.

VALUE OF THE HARE.—It seems that in the very nature of God's providential care over the destinies of man, provisions for his welfare are made as they are demanded by his necessities, and as he comes to a point where he can utilize and enjoy them. This law is illustrated by many of our recent discoveries and is aptly applied to the Belgian hare. This interesting little animal comes to supply a want felt by thousands in all our cities, East as well as West. Indeed we may justly say that this want is more keenly felt in the crowded cities east of the Rockies than it is on the coast, and we believe when its numerous advantages over any other domestic animal for supplying food under the conditions named, are known, the demand for it in that section will be much greater even than it has been here.

An animal that can be cared for in small space, is cleanly, easily kept, prolific and at the same time a producer of superior table food, is really greatly demanded. All of these essential requirements are fully met by the Belgian hare. This has been clearly demonstrated by practical tests given under varied conditions.

It is exceedingly domestic in its nature, can thrive in close confinement, doing well in small boxes in back yards, or on back galleries; in fact, any place that is dry and free from draft. These seem to be the only conditions necessary to its welfare.

CLEANLINESS.—We are bold to say that for cleanliness there is no domestic animal that will compare with it. It is instinctively clean in all its habits. It is the only animal we are acquainted with that can be kept in large numbers in or near residences without serious objection. The hare is so scrupulously clean when given intelligent care, that no fault can be found with it even by the most fastidious.

CHEAP PRODUCTION.—We know of no animal that is so easily and cheaply supplied with food as the Belgian hare. Its demands are exceedingly small, nor does it require attention three or four times a day, as some of our domestic animals do. It will thrive on garden vegetables or hay alone. A little grain may be helpful, but not absolutely essential. We have known when a large number were kept together of their consuming on an average less than 2 cents worth of hay per month, hay costing \$9 per ton. Our observation has been that most beginners overfeed their stock in their zeal to take good care of it. Certainly in cities where hay and grain are generally high, this advantage the Belgian hare has over every other domestic animal places it in great favor with the masses.

As a meat producer the Belgian hare stands at the very head of all domestic animals, not only in the superb quality of meat, but in quantity as well. It will many times excel in the latter regard any animal that can be kept in equal space or at no greater expense. Upon this solid economic basis must rest the business of propagating them.

The demand for cheap and wholesome meat is an ever increasing one. This not alone applies to the large cities, but to every village and hamlet this is a

paramount question. The American is preeminently a meat eater and he must have the best. The delicate and richly flavored meat the Belgian hare produces is pronounced by epicureans as superior to that produced by any domestic animal or fowl. When given proper attention we unhesitatingly say that no sweeter or more palatable meat was ever served for human food.

The Belgian hare is the most prolific animal that has thus far been domesticated. In this respect it is a marvel. It will produce its young every sixty days, and on an average of from eight to twelve at a time. Fifty per year is a conservative estimate of which a single doe may produce. Thus, it will more than make up in number for its small size. There is, after all, no little advantage in its being small. An ordinary family cannot readily care for the meat of a large animal, but the hare can be served fresh, the four to six pounds meeting the demands of the average family.

The Belgian is a beautiful little fellow, graceful in its habits and in every way a most interesting animal to care for, every attention being reciprocated by the most affectionate notice. It is so docile that a child may handle it with perfect freedom.

BY-PRODUCTS ALSO VALUABLE.—Not alone is the Belgian desirable for its meat and for the fancier, but its fur and skin are valuable.

The Belgian hare business seems especially adapted for the employment of women. To many it has proven more remunerative and far easier than many lines of work usually followed by women. The business also offers advantage to those possessing small capital, as it requires but little cash to get started and by attention only a short time will pass before the hutches will be well filled.

The Belgian hare possesses such qualities that the fancier may grow enthusiastic over it. It is susceptible of such high breeding, reaching perfection in many points, that any one who is at all interested in animals, will be attracted by it. Its graceful shape, dainty feet, rich color, silken fur, beautiful ticking, delicately laced ears, all are points which delight the heart of the fancier.

WILL IT PAY.—In this money making age the one paramount question propounded with reference to any enterprise, is "Will it pay?" The reader, if he has not already demonstrated to the satisfaction of his bank account that the breeding of Belgian hares as a business, is profitable, has undoubtedly already made this pertinent query.

Without attempting any exhaustive argument in the affirmative of the proposition, we believe, that if conducted upon business principles the Belgian hare industry will prove profitable, as well as interesting. While every one who embarks in it may not be able to show gratifying results, to say nothing of making the large profits that some breeders have made, yet in general, we believe, considering the capital required, it will prove a lucrative business.

The next question occurring to one who seriously contemplates engaging in the business, is, "Will it not soon be overdone?" When one considers the large number already in it, this is, indeed, a natural question. However, we believe the fear is unfounded. Certainly there is no immediate danger. This is a big country, and its demands for any commodity going into general consumption are simply enormous. It may be insisted, however, that locally it will be overdone. The facts thus far developed disprove this claim.

Why is Los Angeles to-day the best market for Belgian hares in the United States or even in the world? Simply because a larger number of persons are engaged in the business here than elsewhere. Why is the business going to spread all over the country? Because it is being brought to the attention of people everywhere by the great number engaged in the industry here. Why has Los Angeles more fine stock that can be found elsewhere the world over? Because the spirit of competition here has developed a degree of enterprise among the breeders, so that champions and prize winners from all sections have been brought here. Why are all other sections going to draw on Los Angeles for stock? Because so many are engaged in the business here and on account of the superb quality of the stock.

Buyers are not confined to a few small concerns when they come here, but have hundreds of rabbitries to visit, and thousands of animals to select from. The greater number of our intelligent people who go into the business the better it will be for all. Outside buyers will come even before we are really prepared for them. Indeed, Chicago parties have already come to Los Angeles to stock extensive establishments in that city. We must have the stock, and the best of it for them, when they do come.

IMPORTANCE OF GOOD STOCK.—Those who embarked in the business at first did not realize the importance of having high scoring pedigreed stock. From close acquaintance with the requirements which have long prevailed in England, and the real merits of the highest types, our breeders have come to realize that the big money is in this quality. Some time has therefore been lost by many who were not properly informed at the beginning, but most of them are profiting by this experience, and the best strains may now be found in all our leading rabbitries.

Agricultural Review.

ALAMEDA.

SUGAR BEET CONTRACTS.—Livermore Herald, Jan. 13: R. C. Peach, the representative of the Alameda Sugar Company at Pleasanton, is making contracts with the beet growers for the coming season. He is offering the usual price of \$4.50 per ton. It is estimated that about 4000 acres will be planted this year.

SUGAR COMPANY FARM.—E. R. Lilienthal has six ranches between Santa Rita Junction and Pleasanton, which he has consolidated under the name of "The Alameda Sugar Company Farm." Preparations are being made to put every available foot of this land into sugar beets. Manager Davis has 140 men employed and he will double the number as soon as the weather permits.

BUTTE.

GRAIN SHIPMENTS.—Biggs Argus, Jan. 5: Following is a statement of the shipments of grain from the Farmers' Co-operative Union Warehouse in 1899, a total of 5284 tons: To South Vallejo, 69 cars; Sacramento, 67 cars; Port Costa, 53 cars; Stockton, 25 cars; Petaluma, 8 cars; total, 222 cars. To Oroville mill and local delivery, 370 tons; in warehouse, Dec. 31, 6450 tons.

ORANGE SHIPMENTS.—Oroville Register, Jan. 11: The orange shipments from Palermo up to date have been furnished by W. J. Grier. The quantity was 61,227 boxes or 141½ carloads, or had the same number of boxes been shipped per car as was shipped last year the number of cars would have been 152. Last year the total shipments for the season amounted to 188 carloads. There is still considerable fruit on the trees.

FRESNO.

AUSPICIOUS SEASON FOR GRAIN.—Sanger Herald, Jan. 13: The present season could not be more propitious for grain crops.

LARGE TURNIPS.—A pair of mammoth English turnips are on exhibition at this office. The largest one tips the scales at 5½ pounds and measures 27 inches in circumference, while the smaller one weighs 4½ pounds. They were grown in the Kings River bottom by J. T. Walton.

LOS ANGELES.

ORANGE RETURNS.—Azusa Pomotrophic, Jan. 11: The Azusa Citrus Association paid in full for their holiday shipments on last Friday, the growers receiving \$1.59 for "fancys" and \$1.40 for "choice," net. It is stated that never before were returns made so quickly.

ANNUAL MEETING.—The annual meeting of the Duarte Mutual Irrigation & Canal Co. was held Jan. 6th. The following directors were elected: E. H. Bodon, Capt. W. W. Bacon, Dr. C. A. Brown, E. D. Northup, A. S. Church. The directors have elected the following officers: Pres., E. H. Bodon; Sec'y, E. D. Northup; member on San Gabriel River Water Co., E. H. Bodon.

RESOLUTIONS AT FARMERS' CLUB.—Los Angeles, Jan. 5: The University Farmers' Club Convention that closed yesterday at Pasadena passed resolutions as follows: Favoring national aid in the construction of reservoirs for the storage of storm water; favoring the calling of a State convention for the purpose of revising the Constitution and remodifying legislation which now taxes the growing crops, and also for the purpose of simplifying existing water laws; petitioning Congress to enact a quarantine law against the importation of infested fruit; recommending the establishment of a citrus fruit experiment station in southern California and protesting against the arbitrary action of the transportation companies with regard to the routing of fruit shipments.

ORANGE.

CELERY SHIPMENTS.—Dispatch from Anaheim, Jan. 11: Celery by the trainload is now going from the peatlands daily. There yet remains in the fields 800 cars of

a total of 1500, and difficulty is experienced in getting enough men to move the crop.

WALNUT CROP.—Anaheim Gazette, Jan. 11: The annual report of Secretary Whidden of the Santa Ana Valley Walnut Growers' Association shows that \$611 was the actual cost of handling about forty carloads of walnuts at the packing house—a much less expense than had been formerly incurred in similar work.

INFECTED TREES BURNED.—Horticultural Commissioner Huntington burned a consignment of peach trees at Fullerton. The trees had been imported from Alabama and were found to be infected with the peach tree borer. All the trees infected were burned. The packing was also burned, and the boxes in which the trees were shipped were fumigated. The trees in the shipment that were free from the borer were immersed in a solution of whaleoil soap heated to 125° F. A tank 7 feet long, 2 feet wide and 18 inches deep was constructed for immersing the trees.

PLACER.

PROFITABLE INVESTMENT.—Auburn Republican, Jan. 12: One of the leading fruit growers of the county has realized on his deciduous fruits in net proceeds at the rate of 6% on an investment of \$400 an acre.

SAN BERNARDINO.

LEMON PRICES.—San Bernardino Sun, Jan. 14: The Colton Fruit Exchange is paying its members ½ cent per pound for December shipments of lemons.

FARMERS' CLUB ORGANIZED.—Ontario Record, Jan. 3: The Farmers' Club of Ontario has been organized with officers for the ensuing year as follows: President, C. E. Harwood; Vice-President, L. S. Dyar; Secretary, I. S. Watson; Treasurer, W. J. Clark. The club will meet monthly. The question of constitution and by-laws was left to a committee consisting of C. E. Harwood, I. S. Watson and E. E. Swanton. A. P. Harwood, Col. F. W. Hart and R. C. P. Smith constitute the membership committee.

SAN DIEGO.

LEMON YIELD.—Escondido Times, Jan. 11: J. W. Clay gives us the following figures relative to the output of his five-acre lemon orchard: From February 1st to December 10, 1899, he picked 73,209 pounds of lemons and received therefor \$1180.48, the average price being \$1.61½ per hundred pounds. His trees are seven years old.

GRAIN PROSPECTS.—San Diego Union, Jan. 11: In every valley where grain is a prominent crop the acreage already in or ready for planting is much larger than for many years. Thus far this year the rains, though not up to the average, have been well timed and ample, and yesterday's visitation seemed all that was needed to insure a good crop.

EXPERIENCE WITH OLIVES.—Many persons think that olives do not need as much care as other trees, and that they can be planted on land not suited to other varieties of fruit. No greater mistake was made, said Warren Kimball. Olives respond to good care; and if the trees do not bear a good crop, it is because they are not given proper treatment. It is true that olives do not need so much water as oranges and lemons, but they do need some, and, if they do not get it, the crop will likely be a failure. Mr. Kimball advocates planting olive trees in the best soil that can be found, and not in the poorest, if a grower desires to make a success of his venture. He made a mistake in setting his trees too close together; there should be only 45 to the acre, whereas he had set out 100. The foliage is dense and does not permit the sunlight to strike the lower branches, consequently the lower fruit is not of as good a quality as that in the top of the tree.

SAN JOAQUIN.

WILD FLOWERS IN BLOOM.—Stockton Mail, Jan. 11: The tables of Prof. and Mrs. D. A. Mobley are decorated with buttercups gathered near Clements. Buttercups, poppies and other wild flowers are in bloom in many sheltered places, and unless severe frosts come the fields will soon be decked with the bright hues of spring. In many yards of this city are evidences of the remarkable mildness of the present winter. A number of banana trees are growing with all their tropical luxuriance, and in many places the wild grasses along the sidewalks have begun to bloom. The fruit buds on the trees are beginning to start and growers are feeling nervous lest the late frost may do serious damage to the abnormally early buds.

TO TEST THE WIDE-TIRE LAW.—Stockton Mail, Jan. 8: At a meeting of the Executive Committee of the San Joaquin Valley Commercial Association at Hanford on Saturday, the wide tire law and its relation to the subject of good roads was considered, and a committee of three was appointed to prepare a test case

that a debision might be obtained on the constitutionality of the law, whose provisions were indorsed by the Association.

LARGE RADISH.—Mail, Jan. 13: T. H. Blackman exhibited a giant radish grown on his grounds. It is of the ordinary long scarlet variety, and is 13½ inches long and measures 22 inches around, being as big as a good-sized mangel-wurtzel. It had been left in the ground since last spring, but had not gone to seed.

SAN LUIS OBISPO.

MOVING SHEEP.—San Luis Obispo Tribune: The sheep men have left this county and moved their sheep over into Kern and Tulare counties.

SANTA CLARA.

WHERE WATER IS NOT WASTED.—San Jose Mercury, Jan. 14: We have had another week of favorable winter weather. Some rain fell and evaporation has been very slight, so the ground has had the full benefit of all the moisture. The water in the creeks holds out well, as all the ditches are running full, and irrigation goes merrily on both day and night.

FREIGHT SHIPMENTS.—Mountain View Register, Jan. 12: The freight shipments by the Southern Pacific during December, 1899, from Mountain View were: Wine, 1,007,500 pounds; hay, 193,200; garden seed, 22,700; dried fruit, 27,400; miscellaneous, 33,900; making a total of 1,284,700 pounds. The shipments for the same month last year amounted to 740,600 pounds, making an increase of 544,100 pounds. The total shipments for the year 1898 were 11,061,200 pounds and for 1899 a total of 17,275,900 pounds—an increase of 6,214,700 pounds, or over 56%.

SANTA CRUZ.

ORCHARD SALES.—Watsonville Pajaronian, Jan. 11: Some orchard sales for 1900 have been made since the opening of the year.

WILL PLANT LEMONS.—Chas. Galletly has bearing lemon trees, and the fruit is large, clean and of excellent flavor. Mr. Galletly sold part of his lemon crop through A. L. Bixby, and he is so well pleased that he has decided to plant ten acres to lemon trees. It looks as if Pajaro valley was getting ready to be included in the "citrus belt."

SHASTA.

GOOD SEASON FOR STOCK.—Fall River Tidings, Jan. 5: J. P. Eldridge, one of our leading cattle raisers, said up to the present time he has fed none of his cattle except a few calves, and remarked that this has been about the best winter on cattle he has ever experienced. The October rains started the grass, and the mild weather since has kept it growing, so that there is now fine feed on the ranges and stock on the outside is doing better than that which is being fed.

SOLANO.

ORCHARD WORK.—Dixon Tribune, Jan. 12: Some have their orchards plowed all one way and ready for all the rains that come, while others have not yet commenced. Weeds and growth of all kinds have a strong start and will be hard to turn under. This renders second plowing difficult, and often prevents it altogether.

SONOMA.

FARMERS' INSURANCE CO.—Sonoma County Farmer, Jan. 12: At the annual meeting of the Sonoma County Farmers' Mutual Fire Insurance Co. Secretary Harry Geary gave a detailed statement of the work of the directors for the past year. Only one policy holder withdrew from the company during 1899. The net amount of property insured for 1898 still in force is \$127,328; net increase for 1899, \$46,862; total in force January 1, 1900, \$174,190. The receipts for 1899 were \$298; expenses, \$206.64; balance on hand, \$91.36; surplus from 1898, \$231.23; total on hand December 30, 1899, \$322.59. The following directors were elected for the ensuing year: S. T. Coulter, Santa Rosa; R. G. Sutherland, Bennett Valley; John Strong, Bennett Valley; H. Gregory, Santa Rosa; J. H. Oeljen, Petaluma; W. H. Harris, Fulton; C. T. Bruggeman, Bennett Valley; Wm. Evans, Penngrave; John Seeman, Alexander Valley; A. E. Burnham, Healdsburg; Jas. Moran, Sebastopol.

\$100 Reward, \$100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

Address: F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c.

Hall's Family Pills are the best.

SUTTER.

DISPOSITION OF RIVER SEEPAGE.—Marysville Democrat, Jan. 12: Alonzo Grafis believes he has solved the seepage water problem which has caused the farmers in his section much annoyance. He intends to install a pumping plant to force the seepage water back into the river. A ditch a mile long and several feet in depth runs parallel with and quite a distance from the levee, and through it the seepage water flows to the sump where the pump is to work.

STANISLAUS.

CROP PROSPECTS.—Stockton Mail, Jan. 9: G. G. Grant says that the crops in Stanislaus county are in a flourishing condition. The grain is nearly all in, and in many fields it is 6 or 8 inches high and of a very rank growth. The farmers in that county are jubilant over the outlook and are certain of a crop if they are favored with the usual spring rains.

TULARE.

GRAIN PROSPECTS.—Visalia Delta, Jan. 11: J. M. Hughes says that grain sowed in December is up and growing well. The country looks lovely, carpeted in grain of velvety green. Prospects, viewed from the conditions that prevail at present, are highly satisfactory. The last rains were timely, and the precipitation was sufficient to stop plowing for late grain. In the "hog-wallows" the water does not soak very readily. Water is standing in the depressions, and as the soil is not very pervious it will have a bad effect on the growing grain. The soil on the knolls, however, dries out quickly. Alfalfa is knee high on the plains, and the lush feed will make stock fat. All in all, the prospects are good all over the country for a big crop of wheat and the acreage is large.

YUBA.

HEAVY FLOUR SHIPMENT.—Marysville, Jan. 12: One of the largest shipments of flour in the history of the Buckeye Mills was made to-day, a special train of forty cars leaving the warehouse of the Sperry Co. The shipment is for the China trade and consists of 1250 tons. At San Francisco the flour will be loaded on the steamer Algoa.

Rape, 25 Cents a Ton.

Greatest food on earth for sheep, cattle and swine. Salzer's catalog tells also about Million Dollar Potato, and is mailed you with 10 Farm Seed Samples for 10c. postage. John A. Salzer Seed Co., La Crosse, Wis. [7]

One of the Finest Catalogues Ever Published.

One of the most valuable seed catalogues ever issued from any house in the United States is just now being distributed among the friends and patrons of the great seed house of the Cox Seed Company of 411-413-415 Sansome street of this city. These people are among the largest growers and handlers of the best seeds and plants in the West, and growers on the coast are giving them the preference in orders over the Eastern seedsmen. A copy of the new catalogue will be mailed free to any address on receipt of request, addressed to the company's headquarters in San Francisco.

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THE HOME CIRCLE.

Disappointment.

Life at best is but a struggle
Waged between the weak and strong;
Disappointments mark our progress,
Be life's journey short or long.

Of the fondest hopes of childhood,
Youth or manhood's riper years
Vanish like the evening shadows,
Leaving heartaches, sighs and tears.

Wisdom, wealth, love's fairest object—
Val'rous deeds, immortal fame—
Are ideals by many cherished;
These with hope the mind inflame.

But when Time unfolds the future,
Objects we so dearly prized,
Fairest hopes of youth and manhood
Are so oft unrealized.

What is then this brief existence,
But at best a game of chance?
Life—the sum of disappointment;
Man—the sport of circumstance.

Elmhurst. —J. R. Ruckstell.

A Change of Heart.

The minister's old horse was dead.

The Thorpe children made this announcement to the family when they came home from school one day.

"He died all to once," just as if he had been thunderstruck," explained Johnny, who had a fondness for strong effects in conversation.

"Just my luck," growled Mr. Thorpe. "I'll have to trot out another for him. Catch me ever saying again that I'll keep the minister in horses!"

"I don't think you have been to a great deal of expense in that way so far," said Mrs. Thorpe. "I'm glad the poor old animal is dead. I've felt ashamed every Sunday when the minister drove up to the church with the old scarecrow. And I'm sure it was a cross to him to drive the poor old thing, all spavins and ringbones and stiff joints. Honestly, I don't believe he will thank you for another horse if you are not more generous than when you gave him that one."

"I'd like to know what kind of a horse you would have me give him?" asked Mr. Thorpe, angrily. "One of my best ones, I suppose. A minister ought to be thankful for almost any kind of a horse. But that is always the way in this neighborhood. Do a man a kindness and you don't get any credit for it. Just as soon as I let the minister have that horse folks began to wonder what price I put on it, and it was hinted that I cheated the poor man, and all such stuff. I wish folks would mind their own business," and Mr. Thorpe got up from the table with a wrathful expression of countenance.

"I heard Mr. Green say it was money in your pocket to let the minister have the horse that is dead," piped up Johnny. "He said he would have been an expense to you and he would have died on your hands; but by crowding him off onto the minister you made him pay most all your share of the minister's salary."

"You tell Mr. Green I'd thank him to

mind his own business," cried Mr. Thorpe. "I don't ask any odds of him. He needn't go to poking his nose into my affairs, and you say I said so."

"Don't you do any such thing, Johnny Thorpe," cried his mother. "I should think you'd be ashamed of yourself, Silas, to put such ideas into the boy's head. Maybe it was not any of Mr. Green's business in a way, but in another way it was. It's everybody's business when a man is imposed upon because he lets his good nature get the upper hand of his good sense. You know you did impose on the minister by getting him to take that old horse, but you knew he would not say anything against it because he is so peaceable. I would have respected him a good deal more if he had. Ministers ought to stand up for themselves the same as other men."

"I'd like to know how many times I have heard you go over that story," said her husband. "You have it so that you can spin it off like a parrot. Keep on if it does you any good. It don't hurt me."

"I don't know that it does," answered Mrs. Thorpe. "but it ought to, for it is the truth, and it ought to hurt any man's conscience to have such things said about him and know they are so."

From this it will be inferred that a good deal had been said in the Thorpe family about the transaction with the minister. Mrs. Thorpe had always resented it, and had not hesitated to say so. Mr. Thorpe had "got mad" a good many times over it, and it seemed that "the end was not yet."

The next afternoon Mr. Thorpe was at work in the loft over the stable, braiding up seed-corn to hang away out of the reach of mice in winter. The two hired men were at work below, oiling harnesses. They were not aware of his being in the loft above. Presently one of them said:

"I wonder if Mr. Thorpe will work off the old gray horse on the minister? The old pelter ain't worth five dollars, but he will get the minister to take him and allow fifty for him. It's a downright shame to impose on the poor man so. I was glad to hear Mrs. Thorpe go for him so about it yesterday. She told him the truth, and he knew it. That's why he got so mad."

"I don't believe he will make the thing work this time," responded the other. "I heard some of the neighbors talking about it last night, and I rather think they will circulate a subscription paper and raise enough money to buy the minister a decent horse. If they do, I'll give a dollar."

"And I'll give another. It looks mighty small for a man of Mr. Thorpe's means to treat a poor mau so, and it seems all the meaner because the man happens to be a minister. I ain't religious, but I respect ministers, and I wouldn't try to get the start of them just because I thought I could. I have heard folks blame the minister for letting Mr. Thorpe impose on him, but when I was up to Uncle Zeph Breed's the old man told me that he talked to the minister about it, and he said he took the horse because he thought Mr. Thorpe would be mad if he didn't and stay away from church, and he did not want him to do that, for he wanted to do him good, if he could, and he couldn't do it unless he could get him to come out and hear him preach. So you see how it was."

"I believe the soul of a man mean enough to do such a thing is not worth saving," said the other. "Mr. Thorpe is all right to work for. I have no fault to find with him in that way, but when it comes to driving sharp bargains he's a mighty mean man. I wish he knew what his neighbors say about him."

"I just hope the subscription will be a success," said the other. "Won't he be angry if they get a good horse for the minister and don't let him know about it?"

I think the ears of the man in the loft who listened to this conversation burned. His face would have been a study for anyone liking to read a man's thoughts by the expression of his countenance. He looked terribly angry, and then foolish, and once the idea came to him that if anyone could see him they would think that he looked

like a "dog who was caught stealing sheep." He felt that way. It was not pleasant to hear his faults and failings discussed so frankly, and not be able to speak in self-defense.

Mr. Thorpe admitted to himself that the men told the truth. He knew what his neighbors thought of his tricky ways at bargain making, but he saw fit to ignore such opinions. It was none of their business. As he listened to the conversation below, and was forced to acknowledge the truth in a good deal that was said, it began to be clear to him that no man can afford to behave himself in such a manner that "everybody gets down on him" as he expressed it. The good opinion of one's neighbors is worth having, after all. As for the minister, he began to feel ashamed of having treated him as he had. "I did work the old horse off on him. I would not have tried it with anyone else. He let me do it because he thought it might be the means of doing me some good. I am a little ashamed of taking advantage of him. And they will try to get the start of me by getting the minister a good horse, will they? I wonder if I cannot outwit them?"

Mr. Thorpe thought the matter over for a long time. A plan came to him, but he could not accept it, at first. The more he thought about it, the more favorable was his opinion of it.

"I hate to do it, but I will," he said. And that settled it. When Mr. Thorpe made up his mind to do a thing, it was as good as done.

The hired men had finished their work in the stable, and gone about other business. He went downstairs, and looked his horses over. There were five or six very good ones there. Outside, in the barnyard, was the "old pelter" the hired men had spoken of as the probable successor to the horse that had just died on the minister's hands. Mr. Thorpe had to admit to himself that the temptation to get rid of this horse was strong, but he felt that he was stronger, since his mind was made up to "do the fair thing by the minister," and after some deliberation he put a halter on the gray horse who had the reputation of being "an all-around good animal," and led him out of the stable. No one saw him. He was glad of that.

The minister lived in a little house over the hill. He was at work in the garden, when he saw Mr. Thorpe coming down the hill, leading a horse. His wife, who was looking out of the window, saw him, too, and came running to the door.

"Henry, that man's coming with another horse," she said. "If it's one like the last one, don't take it. Tell him you won't be imposed on again. Because you're a minister I don't believe you ought to put up with such treatment. If you don't like to tell him so, let me do it. I'm not afraid to."

"We'll wait and find out what he is after," said the minister. "This horse is one of his good ones, so it isn't likely he is bringing it to take the place of the old one, unless he expects to sell it to me at a good, round price."

"Hello!" sang out Mr. Thorpe, as he came up to the gate. "Been having a streak of hard luck, I heard."

"Well, perhaps," responded the minister. "I'm not so sure about it, though. Anyway, the old horse is dead."

"So I heard," said Mr. Thorpe. "I reckoned you would be needing one almost every day now, so I've brought you over another. How do you think you'd like this one?"

"I'd like him well enough," answered the minister, looking the animal over admiringly. "But it does not happen to be a question of what I like, but what I can afford."

"Well, if I turned him over to take the place of the old one, without extra charge, you could afford him, couldn't you?" asked Mr. Thorpe, with a twinkle in his eye.

"But you couldn't afford to do that," said the minister, feeling sure that Mr. Thorpe was trying to get some kind of joke at his expense.

"That's my lookout," responded Mr. Thorpe. "If the horse suits you, you are welcome to him. To tell the truth, I have not felt quite right about the bargain we made on the other horse, but I guess this will even things up."

The minister was speechless with astonishment for some moments. But at last he got control of his tongue.

"Oh, don't take the trouble to thank me," said Mr. Thorpe. "It's just a matter of business."

And with that he turned and walked

Scrofula and Consumption

People tainted with scrofula very often develop consumption. Anemia, running of the ear, scaly eruptions, imperfect digestion, and enlargement and breaking down of the glands of the neck, are some of the more prominent of scrofula symptoms—are forerunners of consumption. These conditions can be arrested, consumption prevented and health restored by the early use of

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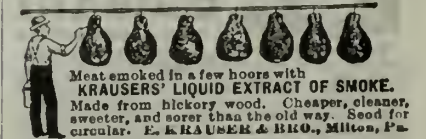
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homeward, leaving the horse fastened to the minister's gate-post.

"What has become of Jerry?" asked Mrs. Thorpe, when her husband came home. "The men thought you must have ridden him to town, but it seems you didn't, since you came home on foot."

"Took him over to the minister," answered Mr. Thorpe, curtly. "Ain't supper about ready?"

"Now, Silas Thorpe, have you let the minister have Jerry?" cried his wife, as much surprised as the minister had been.

"Yes, I have," answered Mr. Thorpe. "I'd a right to if I wanted to, hadn't I?"

"Of course you had," answered his wife, with a beaming face. "I'm glad, so glad! Now I shall not be ashamed to see the minister drive up to church Sundays. I—I don't see how you did it, Silas," with a puzzled look.

"I just did it," said Mr. Thorpe. "I ain't quite so mean a man as you and some of the neighbors have been trying to make out. I reckon you can not say I've taken advantage of the minister this time. But I suppose some will say there was something underhand about it somewhere. Let them if they want to! The minister and I understand it; and while we are satisfied, I don't know that it is any of their business."

Great was the surprise in the neighborhood when it was found that Mr. Thorpe had presented the minister with a good, serviceable horse. Some of them could not believe it at first. When they were obliged to, they felt sure, as Mr. Thorpe had predicted, that he must have some "scheme" on foot of a tricky character, and some of them said as much.

"Let them sweat," said Mr. Thorpe. "They're mad because I got the start of their subscription plan, I reckon." And then he laughed to himself. I am inclined to think that he laughed quite as much over the pleasure it afforded him to think he had "done the fair thing by the minister," as at the "start" he had got of his neighbors.

"I wonder if he's going to get religion?" asked the hired man. "It must be he's met with some kind of a change of heart."

"It's a change that the minister ought to appreciate," was the reply. "If it isn't exactly religion, it's certainly a change for the better."

—Eben E. Rexford.

"Ma, may I go out to play?"

"No; you must sit still where you are."

(Pause.)

"Ma, may I go down into the kitchen?"

"No; I want you to sit perfectly quiet."

(Pause.)

"Ma, mayn't I sit on the floor and play marbles?"

"I have told you twice that I want you to sit just where you are and be quiet, and I mean exactly what I say."

(Pause.)

"Ma, may I grow?" — Collier's Weekly.

A FOUR-FOOT-EIGHT MIDSHIPMAN has just joined his first sea-going ship. Having duly reported himself to the captain—an officer of some six feet two inches—the latter, literally looking down upon the boy, said:

"Well, youngster, so you've come to join, eh?"

"Yes, if you please, sir," meekly responded the midshipman.

"What is it—same old yarn; sent the fool of the family, eh?"

"No, sir," ingeniously replied the youngster. "Oh, no; things have altered since your time, sir."

"Go away," roared the captain, and the middy flew below as fast as his legs could carry him.

Brave the heart that looketh upward,
Heeding not the tempest wild;
Brave the faith that never falters,
Trusting like a weary child.
In the morning joy availeth,
Clouds and darkness pass away.
Lo! the beauty and the sunlight
Of a blissful, cloudless day.

—Minnie Mott.

The Tomato a Tonic.

The tomato has a high dietetic value and has been especially recommended for use in cases of blood impoverishment—a suggestion which, perhaps, rests upon the fact that it contains a considerable amount of iron. The presence of iron may easily be detected by applying to the cut surface of a tomato the ordinary reagent. As a food for supplying iron the tomato is far superior to any of the combinations as commonly used as a means of enriching the blood. It has long been known that these inorganic compounds cannot enter into the composition of the blood. It is possible, however, that they may sometimes be useful, for, as has recently been suggested, while they do not enter into the composition of the blood, they serve to neutralize acid substances which form insoluble salts with the iron of food, and thus prevent its absorption and assimilation. In other words, they act as projectives of the nutritive iron compounds of food. The tomato may serve a similar purpose, and not only by supplying the sour of iron, but the introduction of a larger amount than is needed, providing for the conservation of the amount actually required.

Little Things Worth Knowing.

That a bag of salt or hot sand relieves neuralgia.

That warm borax water will remove dandruff.

That a hot lemonade made from slices of lemon, with hot water poured over them and a little sugar, taken at bedtime, breaks up a cold.

That a cup of strong coffee will remove the odor of onions from the breath.

That well-ventilated bedrooms will prevent morning headache and lassitude.

In making green apple sauce, pit a few dates, cut them into quarters, and add them to the sauce just before removing from the fire. They will be a great improvement to the sauce.

Knowledge and Wisdom, far from being one,
Have oftentimes no connection. Knowledge dwells

In heads replete with thoughts of other men;

Wisdom in minds attentive to their own. Knowledge, a rude unprofitable mass,
The mere materials with which Wisdom builds,

Till smooth'd and squared and fitted to its place,

Does but incumber whom it seems to enrich.

Knowledge is proud that he has learned so much;

Wisdom is humble that he knows no more.

—Cowper.

HERE is the latest by Mark Twain: Meeting Charles Guthrie, a prominent British lawyer, in Vienna, the American humorist asked him "Do you smoke?" "Sometimes, sir, when I am in bad company," was the reply. After a pause came a second question: "You're a lawyer, aren't you, Mr. Guthrie?" "I am, Mr. Clemens." "Ah, then, Mr. Guthrie, you must be a very heavy smoker."

Letters are
The Life of Love, the loadstones that by rare
Attraction makes souls meet, and melt,
and mix,
As when by fire exalted gold we fix.

—J. Howell.

INSINCERITY in a man's heart must make all his enjoyments, all that concerns him unreal, so that his whole life must seem like a merely dramatic representation.—Hawthorne.

It takes a man with a good deal of influence with himself to do something he doesn't want to, and doesn't have to, because he ought to.—Puck.

A TALENT is perfected in solitude; a character in the streams of the world.—Goethe.

DOMESTIC ECONOMY.

Hints to Housekeepers.

One liquid gill equals four fluid ounces.

One fluid ounce contains two tablespoonfuls.

One fluid ounce (one-fourth of a gill) equals eight drams.

One dram, or sixty drops, makes a teaspoonful.

A piece of butter as large as a small egg weighs two ounces.

Nine large or twelve small eggs weigh one pound with their shells off.

One level teacupful of butter or granulated sugar weighs half a pound.

One rounded tablespoonful of granulated sugar, or two of flour, or powdered sugar, weigh one ounce.

If the fingers get badly stained in peeling fruit or vegetables, and the druggist is too far off to get oxalic acid, try rubbing the stains with sorrel leaves or rhubarb, both of which contain the same acid. Spots in linen may be removed by the same agency.

Very often for breakfast and luncheon no tablecloth is used if you have polished table, doilies being put under the plates, and so forth, and centerpiece for the flowers. For a table 45 inches square, the tablecloth should be a yard and three-quarters square.

Kissing a pet bird is one of the many things to be added to one's list of "don'ts." It has been recently discovered that consumption is sometimes hidden in the cages of canaries, parrots and other feathered pets. Lung diseases are prevalent among pigeons, and the practise of placing the lips to the bird's beak is considered a dangerous proceeding and is apt to spread germs.

The mayonnaise of chicken is a delicious dish for any supper. For two ordinary-sized chickens half a pint of mayonnaise is required. Cook the chickens by plunging them into boiling water and keeping the water at a gentle boiling until the meat is tender. Lift from the water, and, when cold enough to handle, remove the skin and bones, keeping the meat in large pieces; make about four pieces of each breast, two of the second joints and two of each leg.

Just before serving dip each piece in the mayonnaise dressing and arrange neatly on a platter.

If the steel of the range is rusted, rub well with sweet oil and let it remain for two days. Then rub with finely powdered, unslaked lime until the rust disappears. Clean the nickel plate of the stove with soda and ammonia, using a woolen cloth. Polish with a clean, dry one. Ovens should be kept free from dust and dirt by frequent brushings and wiping out with a damp cloth while the fire is slow.

Prune Puddings.

The following receipts for making a prune pudding were given by Mrs. B. G. Hurlbert in her talk on the cooking of prunes before the San Jose Grange:

Beat the yolks of two eggs with half a cup of sugar until light, and a tablespoonful of softened butter and a gill of milk. Sift together one cupful of flour with one teaspoonful of baking powder, stirring it in. Then stir in the well beaten whites and one cupful of prunes that have been soaked over night, drained and the stones removed. Chop them with a spoon. Steam the mixture for two hours.

Another receipt was also given for the same dish: Boil one quart of prunes until tender. Sift through a sieve. Sweeten to taste. Beat the whites of three eggs, stir in and bake.

POTATO CROQUETTES.—Take six boiled potatoes, pass them through a sieve; add to them three tablespoonfuls of ham, grated or minced finely, a little grated nutmeg, pepper and salt to taste, and some chopped parsley; work into this mixture the yolk of three or four eggs, then fashion it into the shape of balls, roll them in bread crumbs, and fry in hot lard, and serve with fried parsley.

SARDINE SALAD.—Take two boxes of best sardines and arrange on a platter. For dressing take the yolk of four hard-boiled eggs, put in a bowl and rub to a paste; add a tablespoonful of prepared mustard, three of vinegar, a teaspoonful of sugar and a little cayenne. Mix well together and pour over the sardines. Garnish with sliced lemon.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Jan. 17, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	Jan.	May.
Wednesday.....	64½@64½	68 @67½
Thursday.....	64½@64½	67½@68½
Friday.....	64½@64½	67½@67½
Saturday.....	64½@—	67½@67½
Monday.....	63½@63½	67½@66½
Tuesday.....	63½@62½	66½@65½

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday.....	5s 9½d	5s 9½d
Thursday.....	5s 9½d	5s 9½d
Friday.....	5s 9 d	5s 9 d
Saturday.....	5s 9½d	5s 9½d
Monday.....	5s 8½d	5s 8½d
Tuesday.....	5s 8½d	5s 8½d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 03½@1 03½	@—
Friday.....	1 03 @1 01½	1 07 @1 05½
Saturday.....	1 01½@1 01½	@—
Monday.....	1 00½@1 04½	1 04½@1 04½
Tuesday.....	1 00½@1 08½	1 03½@1 02½
Wednesday.....	98½@1 09½	1 03 @1 03½

WHEAT.

The wheat market has been going from bad to worse since last review. The demoralization, however, was much more pronounced in the speculative field than in the market for actual wheat. The "visible" supply in the United States showed a decrease of 1,360,000 bushels, but this had no effect on the market, owing to a reported increase of 4,000,000 bushels in the world's "visible," and heavy selling pressure from the Argentine. Chicago futures showed a break for the week of 2@2½c per bushel, and the English market for options declined the equivalent of 2½c per cental. On the local Call Board there was a very soft market, May dropping fully 5c and Dec. about 4½c. Quotable values for spot wheat did not show corresponding decline. It was difficult to obtain either shipping or milling wheat at 50c per ton less than the figures current a week ago. The market at this writing (Wednesday noon) shows a fractional recovery from the lowest figures of preceding day.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, \$1.03½@98½c.
December, 1900, delivery, \$1.07@1.02½.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at 98½@99½c; December, 1900, \$1.03@1.03½.

California Milling.....	97½@1 02½
Cal. No. 1 shipping, alongside.....	92½@95
Oregon Valley.....	90 @97½
Walla Walla Blue Stem.....	90 @1 00
Walla Walla Club.....	80 @1 00
Off qualities wheat.....	75 @90

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	-s-d@-s-d	6s2d@-s-d
Freight rates.....	25@27s	35@36½s
Local market.....	\$13¼@1 16¼	\$0 92½@97½

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Values are without quotable change and are being fairly well maintained, considering the very depressed condition lately experienced for wheat. Heavy quantities of flour are being forwarded to Asia, with prospects of this trade increasing rather than diminishing in the near future. Business on local account is not brisk.

Superfine, lower grades.....	\$2 40@2 60
Superfine, good to choice.....	2 65@2 90
Country grades, extras.....	3 00@3 25
Choice and extra choice.....	3 35@3 60
Fancy brands, jobbing.....	3 60@3 75
Oregon, Bakers' extra.....	3 00@3 40
Walla Walla, Bakers' extra.....	3 00@3 40

BARLEY.

Market for this cereal continues favorable to the buying interest, and no likelihood of any special strength or great activity being developed for some weeks to come. There was a very fair movement outward the past week, three cargoes clearing for Europe, with an aggregate of 190,200 centals. Local millers are running almost wholly on low-grade barley, being able to purchase the same at decidedly easy figures, as compared with values current for choice to select quali-

ties. Business in the speculative market or on Call Board was of light volume, with prices for options at a narrow range and lower than preceding week.

Feed, No. 1 to choice.....	75 @77½
Feed, fair to good.....	60 @72½
Brewing, No. 1 to choice.....	87½@97½
Chevalier, No. 1 to choice.....	1 00 @1 07½
Chevalier, No. 2.....	@—

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

Seller, 1900, new, —@—.
May, 1900, delivery, 70½@68c.
December, 1900, delivery, —@—c.
Wednesday, at regular noon session of the Call Board, May, 1900, feed sold at 68½c.

OATS.

Although arrivals and offerings have been of only moderate volume the past week, there was a sufficiency for the immediate demand. Prices remained quotable as previously noted, but only for choice to select qualities did the market show any firmness. The latter kinds were in very limited supply, and there is not likely to be a surfeit of offerings of high-grade oats at any time during the current season.

White Oats, fancy feed.....	1 25 @—
White, good to choice.....	1 15 @1 22½
White, poor to fair.....	1 07½@1 12½
Gray, common to choice.....	1 10 @1 21
Milling.....	1 15 @1 25
Surprise, good to choice.....	1 20 @1 30
Black Russian.....	90 @1 02½
Red.....	95 @1 20

CORN.

Stocks are not heavy, and as for some time past, they are principally Large Yellow and White, imported from the East. Most of the arrivals are going to millers and jobbers direct, as they are simply deliveries of previous purchases. Market is easy in tone, but not quotably lower. Small Yellow is in such limited stock that quotations for the same represent little more than retail values.

Large White, good to choice.....	1 02½@1 05
Large Yellow.....	1 02½@1 05
Small Yellow.....	1 35 @1 40
Eastern Mixed.....	1 00 @1 02½

RYE.

Market is very quiet, with offerings and demand both light. Quotable rates remain practically as before.

Good to choice, new..... 1 02½@1 05

BUCKWHEAT.

No changes to record, but in the absence of any noteworthy business, values are not well defined.

Good to choice.....	2 00 @2 10
Silverskin.....	@—

BEANS.

Market is firm throughout, and especially so for Lady Washington, Small White and Pea beans. There has been considerable demand lately for white beans, mainly for Large White or Lady Washingtons. There were liberal orders from the East and also some purchasing on Government account. The market is in decidedly healthy shape, and not the slightest probability of any weakness being developed for some time to come.

Pea, fair to good, 100 lbs.....	3 00 @3 15
Small White, good to choice.....	2 90 @3 05
Lady Washington.....	2 60 @2 75
Butter, small.....	3 75 @4 00
Butter, large.....	@—
Pinks.....	2 50 @2 75
Bayos, good to choice.....	3 25 @3 50
Reds.....	3 75 @4 00
Red Kidneys.....	3 00 @3 50
Limas, good to choice.....	5 00 @5 15
Black-eye Beans.....	4 50 @4 75
Horse Beans.....	@—
Garbanzos, large.....	2 50 @2 75
Garbanzos, small.....	2 00 @2 25

Recent advices by mail from New York give the following report of the bean market, prices quoted being per 60-lb bushel:

With the opening of the new year there has come slight improvement in the home demand, and exporters have taken a few hundred barrels, and with continued light receipts and strong interior advices the tone of the market has become a little firmer. Three or four cars of choice old Marrow sold at \$2.20, and then the price advanced to \$2.25, with sales at that at the close. The stock of these goods is getting low. Buyers do not seem inclined to take many new Marrow so long as they can get choice old, but the best new are now held a little stronger, with sales at \$2.15@2.17½. It is probable that a well-screened and closely picked lot would exceed our quotation. Exporters have taken some more of the foreign Marrow in bond. Medium are 2½c higher and firm; recent jobbing sales at \$2@2.02½, and some holders are now asking \$2.05. Some ear lots of Pea in bags have sold down to \$1.92½@1.95, but there are no more to be had at those figures, and the jobbing business is at \$2; fine quality in barrels might do a little better. Imported Medium and Pea

have sold mainly at \$1.80@1.85, duty paid. Exporters have filled orders for Red Kidney at \$2.22½@2.25 f. o. b., and there is a generally steady holding. Domestic White Kidney are very slow, as most of the recent export trade has been supplied with foreign. Yellow Eye steady, but quiet. Very little doing in Turtle Soup. California Lima held a little firmer at the close and \$3.35 is an inside price. Further lots of German Giants have arrived, and sales of these are mainly at \$2.60@2.65, though some holders ask more. Green and Scotch peas slow and slightly easier.

DRIED PEAS.

There are few arriving of either the Green or Niles variety. Market remains unfavorable to buyers.

Green Peas, California.....	2 00 @2 15
Niles Peas.....	2 00 @2 15

WOOL.

Market is extremely quiet, so far as any immediate purchasing is concerned. Shipments are being made Eastward of wools purchased prior to the holidays, mostly scoured stock. Prospects continue first-class for a firm market for the coming clip.

SPRING.

Oregon Eastern, choice.....	13 @16
Oregon Eastern, fair to good.....	11 @13
Oregon Valley.....	17 @20

FALL.

Humboldt and Mendocino.....	16 @17½
Middle Counties, defective.....	9 @12
Northern, free.....	11 @14
Northern, defective.....	9 @11
Southern Mountain.....	9 @11
San Joaquin Plains.....	@—
San Joaquin Lamb.....	@—

HOPS.

The market is in the same inactive state as for many weeks past. Values are without quotable improvement, and poor prospect of there being any change for the better in this regard this season. Shippers and handlers on local account do not care to purchase other than most select qualities. Stocks of this description in first hands are practically exhausted.

Good to choice, 1899 crop..... 6 @9

The following review, of interest to hop growers, comes through by mail from a New York authority:

Receipts have been pretty heavy this week, but they include about 4870 bales in transit for export, one straight lot of 2905 bales arriving last Wednesday from the Pacific coast. Business here has moved along about as of late. A fair quantity of stock is selling to brewers, which keeps dealers buying in the interior, and there are fair inquiries from exporters. The irregular quality of the hops makes a wide range in values, but the tone seems to be about steady, particularly on the more desirable grades. Really choice State or Pacific coast can be sold at the present time equal to 14c f. o. b. New York, and shippers would buy considerable lots if they could find the quality, which is quite scarce. The next grade, generally classed as prime, is offering at 12c, and other sorts from 11c down to 6c for very common. So much of the stock is poor that our lower quotations cover a good share of the sales. Only small interest in yearlings, while old olds are neglected and scarcely more than nominal. Continued buying in the interior of this State is reported at 6@13c, only a few lots at the latter price; general sales in range of 8@11c. Most of the best hops out of growers' hands, and buyers are now taking many lots that were passed by in the fall.

HAY AND STRAW.

Tendency of prices on best qualities of stable hay has been to more firmness, but the improvement has not been sufficient to warrant any material change in quotations. For the ordinary run of offerings the market is dragging as badly and at as low figures as at any previous date this season.

Wheat.....	7 00@9 50
Wheat and Oat.....	7 00@9 00
Middlings.....	6 50@8 50
Barley.....	6 00@7 00
Alfalfa.....	5 00@7 00
Timothy.....	@—
Compressed.....	7 00@9 50
Straw, ½ bale.....	30 @45

MILLSTUFFS.

Most kinds are in more than ample supply for current needs, and the market shows a generally easy tone, with no likelihood of values hardening very soon.

Bran, ½ ton.....	12 50@13 50
Middlings.....	15 00@18 00
Shorts, Oregon.....	12 50@15 00
Barley, Roiled.....	15 50@16 50
Cornmeal.....	23 50@21 00
Cracked Corn.....	24 50@25 00

SEEDS.

There is no business of noteworthy proportions to record in seeds of any variety. Stocks are light. Quotations are of neces-

sity based mainly on prices realized in a jobbing way.

	Per ctt.
Mustard, Trieste.....	3 25@3 50
Mustard, Yellow.....	4 50@4 75
Flax.....	2 00@2 25
Canary.....	3¼@4
Rapo.....	2 @3
Hemp.....	4 @4½
Timothy.....	4 @4½
Alfalfa, Utah.....	7 @9

BAGS AND BAGGING.

Nothing of consequence doing in spot goods, nor is there likely to be much trading for several months to come, unless it be in Wool Sacks for the spring clip. These will rule higher than last season, owing to advance in cost of the raw material. Some buyer June-July Grain Bags are being contracted for at steady rates.

Calcutta Grain Bags, buyer June-July.....	6¼@—
Calcutta Grain Bags, spot.....	6¼@—
San Francisco Grain Bags, 22x36, spot.....	6¼@—
State Prison Bags, ½ 100.....	@—
Wool Sacks, 4 lbs.....	@32½
Wool Sacks, 3½ lbs.....	@28¼
Fleece Twine.....	7¼@—
Gunnies.....	@12½
Bean Bags.....	4½@5¼
Fruit Sacks, cotton.....	6¼@7¼

HIDES, PELTS AND TALLOW.

Hides are ruling fairly steady, with stock light. Tendency of the Pelt market is to increased firmness, owing to decreased receipts, but no material advance is anticipated. Tallow is meeting with prompt custom, and market favors sellers.

HONEY.

The market is of necessity quiet, owing to very limited stocks of both comb and extracted, which are mainly in the hands of jobbers. Values are being maintained at previous rates, quotations remaining unchanged.

Extracted, White Liquid.....	7¼@8
Extracted, Light Amber.....	7 @7½
Extracted, Amber.....	5 @5½
White Comb, 1½ frames.....	11¼@12¼
Amber Comb.....	8 @10

BEESWAX.

There is no change in the condition of this market. Offerings of good to choice quality do not lack for custom at full current rates.

Good to choice, light, ½ lb.....	26 @27
Dark.....	24 @25

LIVE STOCK AND MEATS.

Market for beef remains much as last noted, offerings being about ample for the immediate demand. Veal is not arriving in large quantity and is commanding good figures. Mutton and lamb are in light receipt and are meeting with a firm market. Hogs have been coming forward rather freely, but there is a good demand for small and medium sizes, prices for which are being well maintained.

Beef, first quality, dressed, net ½ lb.....	7 @7½
Beef, second quality.....	6¼@6½
Beef, third quality.....	6 @6½
Mutton—ewes, 7½@8c; wethers.....	8 @8½
Hogs, hard grain fed, medium.....	5½@5½
Hogs, small, fat.....	5½@5½
Hogs, large, hard.....	5 @5¼
Hogs, acorn-fed.....	@—
Hogs, feeders.....	5 @5½
Hogs, country dressed.....	5½@6
Veal, small, ½ lb.....	8 @10
Veal, large, ½ lb.....	8 @9
Lamb, spring, ½ lb.....	9½@—

POULTRY.

Turkeys were in heavy receipt the past week, particularly dressed stock, causing the market for the same to break badly, with sales of dressed of fairly good quality down to 13c. Of other poultry there were no large receipts of domestic product, but free arrivals of Eastern chickens full grown. The only scarcity was of broilers and fryers, and for no other kind did the market show firmness.

Turkeys, dressed, ½ lb.....	14 @16
Turkeys, live hens, ½ lb.....	11 @12½
Turkeys, live gobblers, ½ lb.....	11 @12½
Hens, California, ½ dozen.....	4 00 @4 50
Roosters, old.....	4 00 @4 50
Roosters, young (full-grown).....	4 50 @5 50
Fryers.....	4 50 @5 00
Broilers, large.....	4 00 @4 50
Broilers, small.....	3 00 @3 50
Ducks, ½ dozen.....	4 00 @5 00
Geese, ½ pair.....	1 75 @2 00
Goslings, ½ pair.....	1 75 @2 00
Pigeons, old, ½ dozen.....	1 25 @—
Pigeons, young.....	2 50 @3 00

BUTTER.

For the general run of offerings of fresh the market is weak and prices are irregular. Much of the butter now being produced is either from cows running dry or just coming in fresh, so it can be readily seen that there cannot be much really fine butter. When the butter is really A1, or the buyer imagines it is on account of the brand, comparatively stiff prices are still being realized.

Creamery, extras, ½ lb.....	25 @26
Creamery, firsts.....	23 @24
Creamery, seconds.....	22 @23
Dairy, select.....	22 @23

Dairy, seconds.....	18 @21
Dairy, soft and weedy.....	— @—
Mixed store.....	14 @16
Creamery in tubs.....	18 @21
Pickled Roll.....	— @—
Pirkin, California, choice to select.....	19 @22
Pirkin, common to fair.....	16 @18

CHEESE.

There is considerable cutting of rates on new cheese, rather than miss sales, receivers having no faith in the future of the market, and wishing to avoid the loss incurred by shrinkage in weight and cost of carrying.

California, fancy flat, new.....	11½ @—
California, good to choice.....	10 @11
California, fair to good.....	9½ @10½
California Cheddar.....	— @—
California, "Young Americas".....	10 @12

EGGS.

There has been a demoralized market for eggs since last review and sharp declines in values. Both buyers and sellers were scared, neither wishing to carry stocks of any consequence. Arrivals of fresh were not heavy, but were more than enough for the limited demand. Cold storage eggs are still offering out of local ice houses and also from the East.

California, select, large, white and fresh.....	24 @25
California, select, irregular color & size.....	22 @23
California, good to choice store.....	19 @21
Eastern, as to section and grading.....	— @—
Eastern, cold storage.....	16 @19

VEGETABLES.

There were fair receipts of early spring vegetables, mostly from Los Angeles district. Prices for same did not vary much from figures of preceding week, but for offerings which did not arrive in prime order, or which were carried several days, the market was unfavorable to sellers. Winter vegetables did not make much of a display. Onions now on market are mainly from Oregon. Market for this vegetable was higher and was particularly fine for thoroughly sound, hard and uncut stock.

Beans, String, # lb.....	3 @ 6
Cabbage, choice garden, # 100.....	50 @ —
Cauliflower, # dozen.....	50 @ —
Egg Plant, # lb.....	10 @ 12½
Garlic, # lb.....	5 @ 6
Onions, Yellow, Cal., good to choice.....	1 25 @1 75
Onions, Oregon, # cental.....	1 40 @1 75
Peas, Sweet, garden, # lb.....	2½ @ 3½
Peppers, Green Chile, # lb.....	3 @ 5
Peppers, Bell, # box.....	— @ —
Rhubarb, # box.....	— @ —
Squash, Marrowfat, # ton.....	— @ —
Squash, Summer, # box.....	75 @1 60
Tomatoes, Los Angeles, # box.....	1 00 @1 50
Tomatoes, Bay, # box.....	— @ —

POTATOES.

There was a weaker feeling in consequence of the arrival Monday of nearly 14,000 sacks of Potatoes from Oregon, per Portland steamer. This is the first heavy arrival from the North thus far the current season. Values were notably lower, with market especially weak for other than choice to select qualities. There were no very heavy receipts from any other quarter. Stocks in this State have been worked down to rather small proportions. Sweet potatoes were in more liberal supply than preceding week and were obtainable at easier figures.

Burbanks, River, # cental.....	70 @1 00
Burbanks, Bay counties, # cental.....	— @ —
Burbanks, Humboldt.....	70 @ 15
Burbanks, Oregon.....	70 @ 25
River Reds.....	— @ —
Burbanks, Salinas, # cental.....	1 25 @1 40
Early Rose.....	80 @ 95
Garnet Chile.....	90 @1 10
New Potatoes, # lb.....	2 @ 3
Sweet, River, # cental.....	— @ —
Sweet Me ced.....	1 50 @1 60

The Fruit Market.

FRESH FRUITS.

Apples continue to be the only fresh fruit in the deciduous line now offering. There are no heavy supplies and common to medium qualities take the lead in the matter of quantity, with market for latter kinds fully as unfavorable to selling interest as previously noted. Choice to select are meeting with good custom at ruling rates. Higher figures than are quoted are obtainable in a small way for fruit of very high grade, and no scarcity of buyers for offerings of this sort. There has been lately more inquiry for strictly fine Apples at full current rates than could be accommodated. Owing to the shortage of home product, requisitions have been made upon the East. A carload of Eastern Apples is now about due in this center, and it is likely that there will be further importations of considerable volume before the close of the season. There is apt to be a good market for choice qualities of this fruit for fully ninety days to come.

Apples, fancy, 4-tier box.....	1 50 @1 75
Apples, good to choice, # 50-lb box.....	75 @1 25
Apples, common to fair, # 50-lb box.....	25 @ 50

DRIED FRUITS.

In the matter of quotable rates and gen-

eral tone, the market for cured and evaporated fruit shows practically the same condition as a week ago. There is no great amount of business being transacted, but about as much as could be reasonably expected, considering the time of year and the quantity and variety of offerings. Present business is largely from jobbers to shippers and retailers and at generally steady rates. If there were undue selling pressure, these figures could not be maintained, but no great rush to realize is to be anticipated at this date, as stocks of most kinds are too light to admit of any very extensive operations. Present supplies are mainly Prunes, Peaches, Apples and pressed Figs. There are no fears entertained about a clean up of Peaches and Apples before the close of the season. Figs may have to be shaded some in price before all stocks now in the hands of distributors find their way to consumers, but that this will be necessary on a very large quantity is not probable. Prunes of the medium to large sizes are still in fairly liberal supply, but they have been lately moving off much better than generally anticipated, especially on export account. As the Prune is among the latest of the tree fruits to come upon the market, and as the greater part of the season for this variety is yet to be gone through, a better clean up of the fruit in question may be experienced than those of a pessimistic turn of mind, and who have been giving the subject consideration, now think possible.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb.....	10½ @12
Apricots, Royal, fancy.....	12½ @13
Apricots, Moorpark.....	13 @15
Apples, in 50-lb boxes, rings, pressed, fancy.....	7½ @—
Apples, 50-lb boxes, rings, pressed, good to choice.....	6 @ 7
Figs, White, fancy pressed.....	6½ @ 7½
Peaches, unpeeled, good to choice.....	6½ @ 7½
Peaches, unpeeled, fancy.....	7½ @ 8
Peaches, peeled, in boxes.....	12½ @15
Pears, unpeeled Bartletts, halved, fancy.....	9 @10
Pears, halved, unpeeled Bartletts.....	6½ @ 8
Pears, quartered, unpeeled Bartletts.....	6½ @ 7½
Plums, Black, pitted.....	6½ @ 7½
Plums, White and Red.....	7 @ 8
Prunes, in sacks 40—50s.....	4 @ 4½
50—60s.....	3½ @ 3¾
60—70s.....	3¾ @—
70—80s.....	3¾ @—
80—90s.....	3 @—
90—100s.....	2½ @—
110—130s.....	2 @—
Prunes in boxes, ¼¢ higher for 25-lb boxes, ½¢ higher for 50-lb boxes.	
4 sizes Santa Claras and equal.....	2½ @—
4 sizes San Joaquin and Northern.....	2½ @ 2½
Prunes, Silver.....	4 @ 7

COMMON SUN-DRIED.

Apples, sliced.....	4 @ 5
Apples, quartered.....	4 @ 5
Figs, Black.....	3 @ 4
Figs, White.....	— @—
Peaches, unpeeled.....	— @—

Advices by late mail from New York furnish the following report of the dried fruit market in the East:

Jobbing trade for evaporated apples has continued moderate, but with a good export demand market has ruled firm, with prices tending upward; strictly prime command 7¢ promptly and some business has been done at 7½¢; choice to fancy range from 7½¢@9¢ as to quality, but only a small jobbing trade passing. Sun-dried quarters have an active export demand and suitable grades are strong, but sliced continue dull and easy. Chops have had a little more attention and rule steady, and waste is a shade higher under export demand, with occasional sales of both higher than quoted. Cherries have had more attention and rule firm, but other small fruits generally dull. California fruit rather quiet, but held about the same in price.

Apricots, Cal., Moorpark, 800, # lb.....	15 @17½
Apricots, Cal., Royal, 1800, # lb.....	13 @14
Peaches, Cal., 1800, peeled, # lb.....	18 @22
Peaches, Cal., 1800, unpeeled, in bxs, # lb.....	8 @ 9
Peaches, Cal., 1800, unpeeled, in bags, lb.....	7½ @ 8¾
Prunes, Cal., 1800, # lb.....	3½ @ 7

RAISINS.

There have been no new features developed in the raisin market since last review. The Growers' Association is maintaining previous rates. Present business is light and is mostly of a small jobbing order, with supplies of most kinds too scanty to admit of wholesale trading. Second grade loose Muscatels, designated Pacifics, constitute the bulk of present supplies. Unbleached Sultanias continue in light stock and are salable relatively to better advantage than bleached.

F. O. B. FRESNO DELIVERY.

London Layers, 6-crown, # box.....	— @—
do do 5-crown, # box.....	— @—
do do 4-crown, # box.....	— @—
do do 3-crown, # box.....	1 60 @—
do do 2-crown, # box.....	1 50 @—
Valencia Layers, # 20-lb box.....	80 @1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6¼ @—
Loose Muscatel, seedless.....	5 @—
Pacifics.—2-crown loose Muscatel, 5½¢; 3-crown, 6¢; 4-crown, 6½¢; seedless, 4½¢.	
Oriental.—2-crown loose Muscatel, 4½¢; 3-crown, 5½¢; 4-crown, 6¢.	

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, # lb., 10¢; choice, 9¢; standard, 8¢; prime, 6¢. Unbleached, 6¢.

Sultanias.—Bleached fancy, # lb., 8½¢; choice, 7½¢; standard, 6½¢; prime, 5¢. Unbleached, 5¢.

Loose Sultanias.—Fancy, # lb., 5½¢; choice, 4½¢; standard, 3½¢.

Valencia Clusters.—Fancy, # lb., 7¢; choice, 6¢; standard, 5¢.

CITRUS FRUITS.

Oranges were in increased supply, and with the weather rather unfavorable most of the week for this fruit, the market lacked firmness, especially for other than most select Navels. Some of the latter were placed at an advance on quotations. The first of the season of the tri-weekly auction sales of oranges in this center was held today. Lemons are offering at same figures as for several weeks past, but are not meeting with much sale. Limes are quotably unchanged, with market very quiet.

Oranges—Navels, # box.....	1 00 @2 00
California Seedlings.....	50 @1 00
California Tangerine, # box.....	— @—
Grape Fruit, # box.....	1 00 @2 00
Lemons—California, select, # box.....	3 00 @—
California, good to choice.....	2 00 @2 50
California common to fair.....	75 @1 50
Limes—Mexican, # box.....	4 00 @4 50
California, small box.....	75 @1 25

NUTS.

While there are not many Almonds or Walnuts now on market, the inquiry for them at present is decidedly limited, and free sales could not be effected at full current quotations. Peanuts are being favored with a firm market, demand being fair and stocks light.

California Almonds, shelled.....	17 @20
California Almonds, paper shell, # lb.....	11 @12
California Almonds, soft shell.....	10 @11
California Almonds, hard shell.....	6 @ 7
Walnuts, White, soft shell.....	10 @11
Walnuts, White, California, standard.....	9 @10
Chestnuts, California Italian.....	9 @10
Peanuts, California, fair to prime.....	4½ @ 5½
Peanuts, Eastern, hand-picked.....	6 @ 6½
Pine Nuts.....	5 @ 5½

WINE.

There has been a little business transacted in wine of last year's vintage, a few transfers being reported at 15¢@16¢ per gallon, San Francisco delivery, and for a little of superior quality 17¢ has been realized. So far as analyzed, the crop of 1899 is good. As the quantity is light, prospects are that the market will rule tolerably firm throughout the year. The outward movement of older wines continues of fair volume, both overland and by sea. One vessel clearing for Honolulu the past week took 10,000 gallons, and the preceding week a vessel bound for same port carried 8000 gallons.

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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks.....	67,345	3,052,900
Wheat, centals.....	68,080	2,505,271
Barley, centals.....	123,421	3,934,877
Oats, centals.....	7,335	569,128
Corn, centals.....	3,630	86,529
Rye, centals.....	615	84,505
Beans, sacks.....	1,845	288,028
Potatoes, sacks.....	37,424	732,564
Onions, sacks.....	2,602	121,206
Hay, tons.....	2,237	98,199
Wool, bales.....	17	35,314
Hops, hales.....	675	8,126

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks.....	76,380	1,869,931
Wheat, centals.....	59,621	2,144,630
Barley, centals.....	197,254	3,183,910
Oats, centals.....	1,877	26,648
Corn, centals.....	396	10,322
Beans, sacks.....	1,074	18,071
Hay, bales.....	3,677	64,553
Wool, pounds.....	159,797	3,643,975
Hops, pounds.....	7,688	668,736
Honey, cases.....	10	3,238
Potatoes, packages.....	2,918	48,298

California Dried Fruit at New York.

NEW YORK, Jan. 17.—California dried fruits: Market quiet and steady. Evaporated apples, common, 6¢@6½¢; prime wire tray, 6½¢@7¢; choice, 7½¢@8¢; fancy, 8½¢@9¢.
Prunes, 3½¢@6¢.
Apricots, Royal, 13¢@15¢; Moorpark, 15¢@18¢.
Peaches, unpeeled, 7½¢@10¢; peeled, 20¢@23¢.

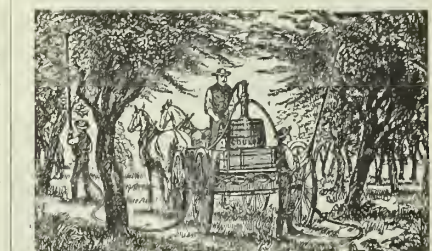
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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING JAN. 2, 1900.

- 640,264.—SKATE—S. S. Black, Pasadena, Cal.
640,445.—METAL PARTITIONS FOR BUILDINGS—C. Collins, S. F.
640,178.—SPRING HINGE—J. W. Currier, Los Angeles, Cal.
640,277.—TROUSERS' PROTECTOR—P. E. Daniels, Oakland, Cal.
640,637.—HASP FASTENER—J. Davey, Oakland, Cal.
640,642.—HAT FASTENER—A. B. Enns, Dallas, Or.
640,372.—HEADER AND THRASHER—J. G. Evans, Waitsburg, Wash.
640,463.—HYDRAULIC ELEVATOR—P. J. Gildea, S. F.
640,378.—OIL BURNER—C. A. Hammel, Los Angeles, Cal.
640,285.—RAILWAY TIE—W. M. & E. G. Hodson, Roseburg, Or.
640,569.—NUT LOCK—J. Jorgensen, S. F.
640,304.—CLAMP—E. L. Lowe, S. F.
640,578.—TEMPORARY BINDER—E. Marsky, San Jose, Cal.
640,477.—STREET SWEEPER—J. Maxon, Burbank, Cal.
640,411.—PLOW—W. H. Parlin, Seattle, Wash.
640,695.—CARBURETOR—E. D. Parrott, Portland, Or.
640,487.—BICYCLE SUPPORT—V. A. Perrot, Colegrove, Cal.
640,488.—MUST PUMP—J. A. Philpott, Windsor, Cal.
640,496.—CARTRIDGE LOADER—G. E. Standish, Selby, Cal.
640,714.—LOOM—Simpson & Northrop, Tustin, Cal.
640,117.—EXTRACTING PRECIOUS METALS—Tatro & Sharpe, Seattle, Wash.
640,718.—EXTRACTING PRECIOUS METALS—Tatro & Sharpe, Seattle, Wash.
640,242.—STEAM STEERING GEAR—Turner & Miller, Seattle, Wash.
640,341.—ROCK DRILL—G. D. Whitcomb, Glendora, Cal.
640,248.—PAPER FOLDER—F. Wulff, Colusa, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

NUT LOCK.—J. Jorgensen, San Francisco, Cal. No. 640,569. Dated Jan. 2, 1900. The object of this invention is to provide a locking device for nuts which are used upon vehicle axles, shafts or bolts, and under such conditions that the nuts fit upon the end of the shaft or bolt where it is necessary to prevent their turning off or becoming loosened, while at the same time they may be easily disengaged when it is desired to loose the nut. The nut has a radial groove straight across its face from the central opening to one outer edge, a hole made at one side parallel with the central threaded opening. A spring-pressed stem is mounted in said opening, and an arm directly on the end of the stem extends at right angles thereto straight across the face of the nut, radial to the center of the opening and lying within the radial groove. This arm has a beveled point lying interior to the wall of the opening in the nut adapted to engage a notch in the screw to lock the parts after the nut has been seated. The spring by which the arm is normally held in engagement with the nut will readily yield to allow the arm to be raised and thus disengage the locking device when it is desired to remove the nut.

HYDRAULIC ELEVATOR.—P. J. Gildea, San Francisco, Cal. No. 640,463. Dated Jan. 2, 1900. This invention relates to an apparatus which is designed for elevating sand and other material by the aid of jets of water introduced under pressure into the elevating pipe. It consists of concentric tubes, the inner of which conducts the material to be lifted and the outer of which receives water under pressure, which is delivered into an enlarged closed chamber at the lower end and surrounding the inlet of the inner chamber or tube. This inlet forms a suction pipe, and jet tubes or pipes passing through the bottom of the cham-

ber discharge the water under pressure into the inner chamber, thus producing a vacuum which will draw the material through the suction pipe, and a velocity and momentum which will eject it through the discharge passage. These jet tubes are preferably spirally disposed around the inlet, and, by this construction, they produce a rotary or whirling action, which prevents the packing of the material and its lodgment within the apparatus.

MUST PUMP.—J. S. Philpott, Windsor, Cal., one-half interest assigned to Geo. A. Nalley, same place. No. 640,488. Dated Jan. 2, 1900. This invention relates to that class of pumps which are designed to remove the express juice of the grape called "must." It comprises open-topped cylinders with pistons movable therein, a crankshaft with connections between the pistons and the cranks, so that by turning the shaft the pistons are reciprocated. Ports are made through the pistons surrounding the center, and a spring-pressed valve is closable from below over the ports. A valve chamber is bolted to the bottom of the cylinder, having a passage between it and the lower part of the cylinder. A spring-pressed closable globular valve is fitted into the chamber and closes the passage on the upward movement of the piston, but opens when the piston is forced down to allow the escape of the liquid. The valve has a guide stem from below and a conical vertically perforated projection from the lower head of the valve chamber forms a guide within which the stem is slidable and the valve and spring maintained in position. Holes are made through the bottom of this guide hole for the escape of any liquid which may find its way therein.

METAL PARTITION AND FURRING FOR BUILDINGS.—C. Collins, San Francisco, Cal. No. 640,445. Dated January 2, 1900. The object of this invention is to construct a light and rigid metallic frame work which will serve for partitions, furring, ceilings and other subdivided structures. It consists of strips or sheets of metal which are slotted or cut so as to provide strips which remain connected at one end with the main portion, and are bent outwardly therefrom and extend across at any desired angle, and either flat or twisted so as to form connections and braces between adjacent main strips.

COVER AND BINDER FOR PAPERS.—Emil Marsky, San Jose, Cal. No. 640,578. Dated Jan. 2, 1900. This invention relates to a cover and binder for magazines, pamphlets, loose sheets of any description and the like, which it is desired to hold temporarily and permanently between the covers. It consists of a rigid back having rigid flexibly connected edge sections and cover sections upon each edge. Rigid plates are fixed at each end of the back, with inwardly turned tongues adapted to engage slots in the papers to be held, and a spring or springs are fixed to one of the edge sections adapted to press upon the papers when said section is turned to enclose them. Clamps at opposite ends of the back have arms, one of which is pivoted to one of the edge sections and has an extension beyond its pivot point, and the other arm encloses the other edge section and is sufficiently shorter so that, when turned to allow the other parts to be opened, it releases the other large section, while the other arm extends across the other edge section and cover portion, which is flexibly connected therewith.

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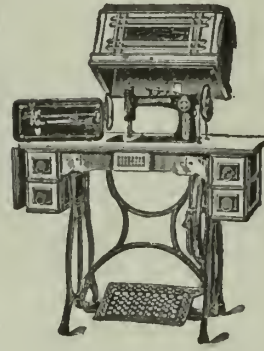
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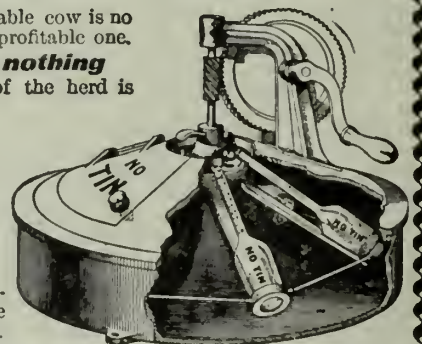
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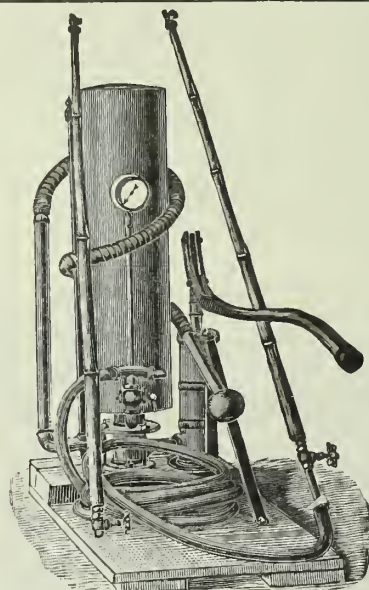
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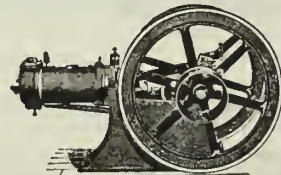
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Patrons of Husbandry.

Grange Notes.

At the installation of Two Rock Grange there was a large attendance from the valley around, and the following visitors from Petaluma Grange: D. W. Winans, Chaplain; Geo. Parks, M. D. Hopkins, H. L. Pease, John King and Henry Eastman. In the forenoon six candidates took the third and fourth degrees. At noon a harvest feast was held. The installation, District Deputy D. M. Winans presiding, was held in the afternoon.

ACCORDING to the Sonoma County Farmer, the State Grange has decided to push the work of Grange extension, and J. S. Taylor, Worthy Lecturer of the State Grange, was appointed Deputy Organizer. The Grange declared itself in favor of a free market in San Francisco, and also declared for pure food and war against adulterated canned goods, particularly those bearing California brand. Among those present were the Worthy Master, G. W. Worthen, Committeemen Daniel Flint, H. F. Blohm and D. M. Houx; E. F. Adams, D. M. Winans, J. M. Moore, W. L. Overhiser, N. H. Root, C. W. Emery, Miss L. S. Woodhams.

THERE was a large attendance at the San Jose Grange January 13th. Most of the time was spent in conferring the first and second degrees on a class of nine candidates. Quite a number of those who were awaiting initiation could not be present. On January 27th the third and fourth degrees will be conferred on about fifteen candidates. The following standing committees were announced by Worthy Master Coates: Visiting Committee—Mr. and Mrs. S. P. Sanders, Mr. and Mrs. W. H. Lawrence, Mr. and Mrs. S. Lee. Finance Committee—J. Bettinger, G. H. McCracken, Mrs. Mary Barnes. Congressional Committee—J. R. Lewis, B. G. Hurlbert, E. T. Pettit. Committee on Conduct of War—G. W. Worthen and G. C. Rodell. A few ideas on mushrooms were given by the Lecturer and samples shown. A talk on nitrogen producers and the co-operation of plants will be given by Professor Volney Rattan at the next meeting.

WATSONVILLE GRANGE has installed the following officers. A. P. Roache, Past Master of State Grange, acting as installing officer; Master, G. W. Rowe; Overseer, Mrs. N. Mauk; Lecturer, Mrs. G. D. Morgan; Chaplain, Mrs. N. A. Uren; Secretary, H. F. Blohm; Treasurer, Mrs. E. Z. Roache; Gatekeeper, Mrs. D. W. Rohrbach; Steward, N. A. Uren; Assistant Steward, W. L. Gilkey; Lady Assistant Steward, Miss Vora Roache; Flora, Miss Eva Rowe; Pomona, Mrs. H. F. Blohm; Ceres, Mrs. W. T. Gilkey. The day closed with a feast and a literary programme.

Stockton Grange.

TO THE EDITOR:—At the meeting of Stockton Grange held on the 6th inst. the following officers were elected: Master, Norman E. Alling; Overseer, John B. Harelson; Lecturer, Mrs. Irene E. Leadbetter; Steward, Nathan H. Root; Assistant Steward, John L. Beecher; Chaplain, Mrs. A. Ashley; Treasurer, Joseph Adams; Secretary, Nathan T. Root; G. K., Mrs. Cora

Beecher; Ceres, Mrs. A. Adams; Pomona, Miss E. S. Root; Flora, Miss Burgie Harelson; L. A. S., Mrs. P. C. Rumrill; Trustee, Wm. L. Overhiser. N. T. Root, Secretary.

CORRESPONDENCE.

Fruit Growers and the Nicaragua Canal.

TO THE EDITOR:—Some hundreds of the fruit growers who attended the San Jose Convention graciously promised to put forth some personal effort toward the construction of the Nicaragua canal.

The appended resolution was passed and printed copies were handed round for the acceptance of those who were willing to get the same, or a similar resolution; passed by any local bodies, such as boards of Supervisors, chambers of commerce, farmers' clubs, granges, etc., with which they are connected, and forward it to Congress:

WHEREAS, Half a century has already been devoted to a succession of surveys by various commissions, without any decisive steps being taken toward actual construction; and

Whereas, The Nicaragua Canal Commission, headed by Admiral Walker, has reported favorably as to the entire feasibility of such construction at a reasonable outlay; and

Whereas, The prosperity of the whole agricultural and horticultural interests of the Pacific coast, involving many millions of dollars annually, depends in the future on improved transportation facilities, therefore be it

Resolved, That this convention of the fruit growers of California most urgently petition the Congress of the United States to proceed to the immediate construction of the Nicaragua canal, upon the basis of the Walker Commission.

I trust this business has not slipped their memories, because the opponents of the canal never forget to oppose it, and if we whose interests are involved fail to vigorously support the demand for the canal, there is no one to support it for us.

Let your Representatives understand that they will be considered to have utterly failed in their duty unless they obtain at least a full or fair consideration by Congress of the matter of the resolution.

Those who have no copy are invited to cut out the one appended hereto and make earnest and immediate use thereof.

I have read that when a Congressman receives one letter on a subject he understands that that one letter represents a thousand others who are thinking the same thing, but are too apathetic to write. When he gets a hundred letters he recognizes that his whole constituency is bent on business, and that he has got to hustle. I want each PACIFIC RURAL PRESS reader to consider it his imperative duty to make his Congressman hustle on this canal question.

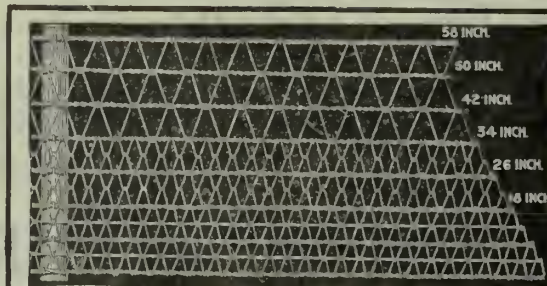
EDWARD BERWICK.
Monterey, Cal.

—A. Bodynuski, V. Patapoff and F. Brevisoff, of Russia, are in San Francisco as commissioners from Russian colonists to report upon the Pacific point best suited for a colony.



WORTH \$50 A BOTTLE To This Man.

It may be worth a like sum or even more to you. Fingal, Barnes Co., N. D., March 19, 1898.
Dear Sirs:—I have used your Kendall's Spavin Cure and I think it a good Liniment. I have cured a Spavin on my best mare, and I would not take \$125 for her, which I offered for \$75 before. I will be pleased to have your book and receipts for this inclosed stamp, as I read on the carton.
Truly yours, FRANK SMITH.
It is an absolutely reliable remedy for Spavins, Splints, turbs, Ringbones, etc. Removes the bunch and leaves no scar. Price, \$1; six for \$5. As a Liniment for family use it has no equal. Ask your druggist for KENDALL'S SPAIN CURE, also "A Treatise on the Horse," the book free, or address
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but the hog hasn't been bred that will tear up or break through the

ELLWOOD WOVEN FENCE.

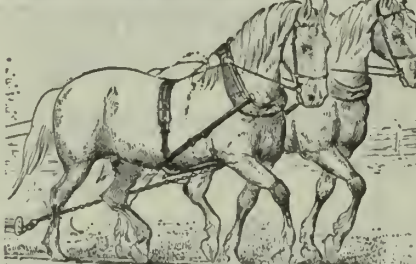
Made of hard Bessemer Steel Wires, rust proof, and proof against all attacks of animals, heat or cold, dry or wet, wind or weather. Although the best, the Ellwood costs but little and is practically everlasting. Your dealer ought to have it. If he hasn't write for catalogue, etc., to

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NO TRACES. NO WHIFFLETREES.



Draft absolutely direct, just as in common harness. Sits easy; can't chafe or gall. Perfect for all low down farm or field work. Invaluable in the Orchard, Vineyard or Hopyard.

Horses have perfect independence of movement. Used by the best practical farmers and orchardists in the country. Try it; if not satisfied return at our expense, and money will be refunded.

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It acts at once because it is very soluble. This makes it instantly available as plant food; 100 to 200 lbs. per acre is sufficient for most crops.

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Has been abundantly proved THE FARMER'S FRIEND ALL OVER THE WORLD.

Greatly improves the quality and increases the crop of Fruits, Wheat, Barley, Oats, Rye, etc., as it provides at low cost an abundant store of available and durable phosphates which meet the requirements of nature in a ready, rational and remunerative manner. The sales of Thomas' Phosphate Powder have increased in thirteen years from 50 to 1,000,000 tons per year.

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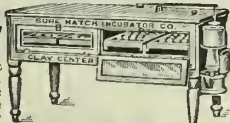
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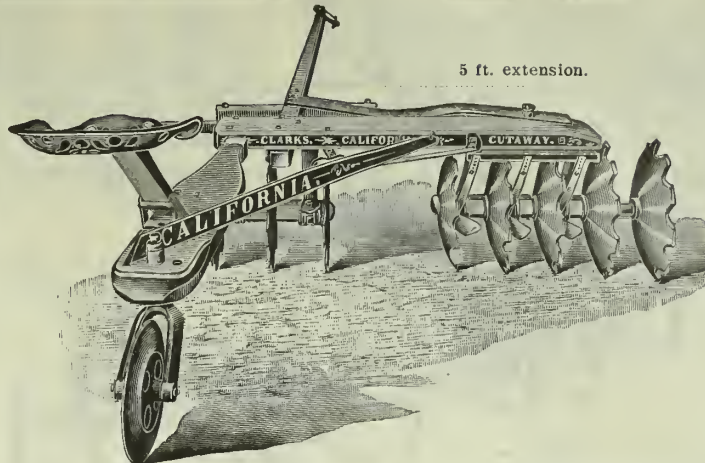
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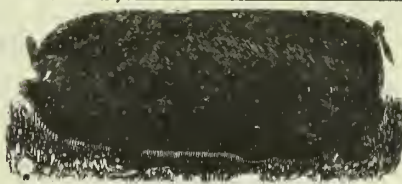
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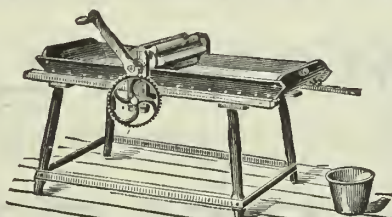
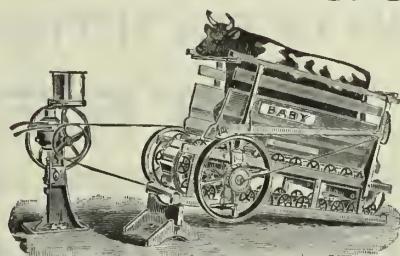
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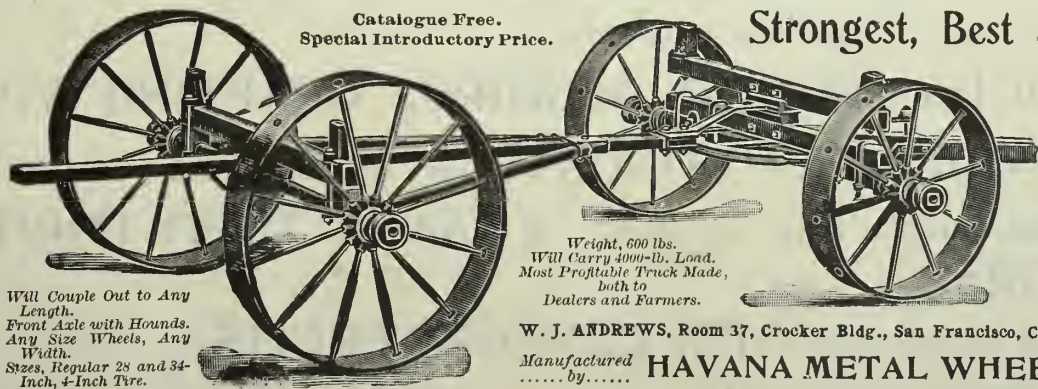
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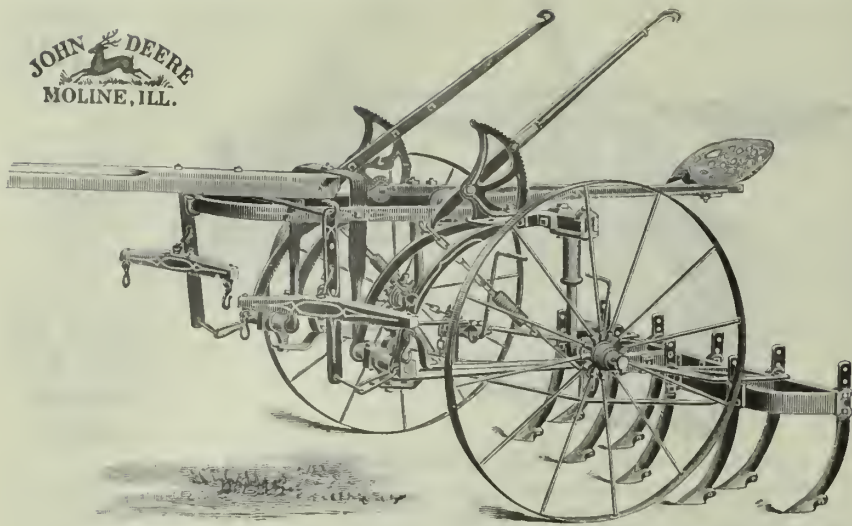
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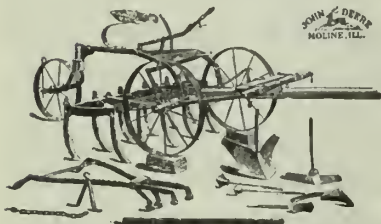
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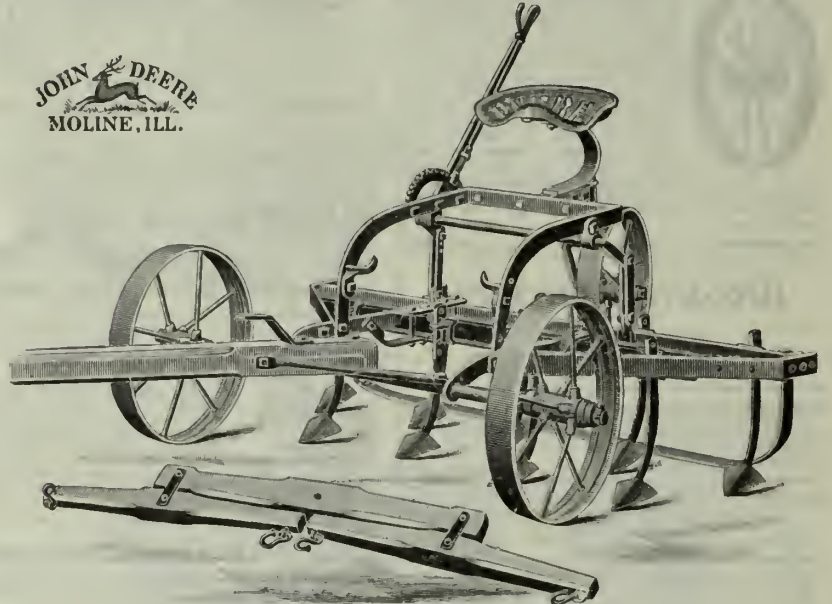
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 4.

SAN FRANCISCO, SATURDAY, JANUARY 27, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

A Word to the Wise.

We have upon this page a most significant illustration of facts and policies which we have been urging in our editorial columns for the last few months, namely, the local interest in improved live stock and the opportunity for breeders to advance their enterprises in stock lines. We know that Californians are awake to the advantage of multiplying live stock in this State, for the purposes of ministering to the present profitable demand, to replace the trainloads of meat products which we receive from the Middle West and the trainloads of live stock from the ranges of adjacent States; to turn to profit the vast volumes of natural and cultivated forage which is available, and which can still be cheaply increased in amount by turning land to alfalfa, Kafir corn and the like; to equip ourselves for the rapidly increasing export demand both for meat and meat products and for good breeding stock to establish breeding farms around the Pacific. All these directions for enterprise we have freely and frequently urged and we were fully convinced that people were ready for investment in such lines. The demonstration came in a way we had not anticipated, but in a perfectly logical and indisputable form. The very first insertion of Mr. Mecham's attractive announce-

An Unsolicited Letter From a Pleased Advertiser.

Live Oak Stock Farms

FRANK A. MECHAM, Proprietor.

Importer and Breeder of Red Polled Cattle,
Shropshire Sheep and Merino Sheep.

Petaluma, Cal., Jan 15th 1900

*The Pacific Rural Press
330 Market St.
San Francisco Cal*

Dear Sir

I sold this week 100 (one hundred) head of The Hornless American Merino Rams to J. R. Prather of Linden San Joaquin County. Price \$10.00 per head & also sold 4 (four) head of Yearling Red Polled Bulls to Mr. E. G. Goli Sausalito Price \$50.00 per head. And one Red Polled Bull to C. F. West Elliott San Joaquin County Price \$50.00. I am receiving letters every day from all parts of the country inquiring about my stock that is advertised in The Pacific Rural Press. From the way the letters are coming in you will have a large circulation

Very Respectfully

Frank A. Mecham.

ment in our columns brought him such unequivocal and gratifying results that he wrote us the letter which appears in facsimile upon this page. He apparently wished to bear testimony that our preaching was true, and he could hardly have done it in more effective form.

The first thought of Mr. Mecham's letter is that it is proper communication of an advertiser's satisfaction with his chosen advertising medium, and this is true. Cordial relations between advertisers and the journal they patronize are always of advantage, and we desire to encourage such relations. We could have discharged our duty in this line by a reply to Mr. Mecham in the same spirit which actuated his writing. But looking more closely into the matter, it seems to us that Mr. Mecham's experience has a broader bearing, and that it really conveys a very timely and pertinent lesson in the general direction which we have outlined above. Californians want more live stock; they are also convinced that they need improved breeds. The local supply of such stock is small and breeders are few. The right of way which the fruit interest has had for a score of years, accompanied as it was by low values for animal products from various causes, accomplished a relaxation of breeding interests.

PACIFIC RURAL PRESS.

Office, Clark Building, No. 330 Market Street, San Francisco, Cal.
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Advertising rates made known on application.

Registered at S. F. Postoffice as second-class mail matter.

E. J. WICKSON..... Horticultural Editor.

San Francisco, January 27, 1900.

TABLE OF CONTENTS.

EDITORIAL.—A Word to the Wise, 49. The Week; The Tillering of Grain, 50.
 QUERIES AND REPLIES.—Adequate Moisture and Fruit Bearing; Unprofitable Almonds; Persimmons, Olives and Hot Bed Glass; Fat Percentage and Corral Grass; Plants for Poultry; To Clean Fruit Trees, 51.
 WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending January 22, 1900, 51.
 FORESTRY.—The Farmer and the Forests, 52.
 CEREAL CROPS.—Kafir Corn, 52.
 THE DAIRY.—The Silo, 52. Care of the Dairy Cow, 53.
 THE POULTRY YARD.—Treating Sick Fowls; Poultry Discussion and Exchange, 53. Santa Clara Poultry and Hare Club, 54.
 HORTICULTURE.—The Subsoil Plow in the Orchard; In-Archling Trees Injured by Gum Disease; Twice Plowing Urged, 54.
 THE VETERINARIAN.—Answers by Dr. Creely—Sick Hogs; Treatment for Udder Trouble; To Kill Lice on a Horse, 54.
 AGRICULTURAL REVIEW.—55.
 THE HOME CIRCLE.—The New Year; The Sweetness of Forgiving; A Search That Was Rewarded, 57. How to Economize, yet Have Dainty Appointments; Care of Silver Ware; Boys Who Succeeded; Avoid Unkind Speeches; The Twenty Best Books, 57.
 DOMESTIC ECONOMY.—Tested Recipes, 57.
 THE MARKETS.—Produce Market; Fruit Markets, 58-59.
 CORRESPONDENCE.—Nevada County Notes; A Promising Outlook for California, 60.
 PATRONS OF HUSBANDRY.—The Worthy Master in Sacramento County; Tulare Grange; Grange Elections, 62.
 MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 63.

The Week.

Agricultural affairs are progressing with few sensational features. The interior valley is receiving too much fog for comfort but the low temperature is probably doing well in holding back the fruit bloom, even though it is also making the wheat grow slowly. In the Sacramento valley last week we saw much land too wet to plow and owners restless under enforced idleness. There was also a considerable area of rather yellowish grain from excessive moisture. Still the winter is wearing along and there will be plenty of warmth soon enough. At the south there is still need of rain.

It is interesting to announce that Forecast Official Alexander G. McAdie, of the Weather Bureau in this city, is about to go to southern California to study the question of the protection of citrus fruits from frost. We bespeak him the kindly attention of all our cold friends in that part of the State. Mr. McAdie is a most thorough investigator, and will be glad to have all pertinent facts brought to his attention. The inquiry is one eminently fit to be made.

A prominent item in local public affairs is the call of an extra session of the Legislature to choose a Senator and fix up water-front laws in this city. So far as electing a Senator is concerned, the people are growing in the belief that they could do it better themselves than by representatives, and this proposition seems to be gaining support everywhere.

Wheat seems to have made a turn and is looking up on both spot and speculation—less favorable outlook in Europe has something to do with the latter. Other cereals are unchanged. Hay and millstuffs are quiet and unchanged. Beef is a little easier. mutton has recovered its firmness and hogs are still in good demand for local packing. Fine butter is in demand and scant supply but lower grades go slowly. Cheese is weak and declining. Eggs are in better tone but prices are not improved. Supplies are selling freely. Poultry is about the same with the youngsters most sought for. Turkeys are in excess. Arrivals of citrus fruits are free and sales are slow during the cold weather. Prices are low. Dried fruits, as a whole, are more in request and are selling more freely. The market is better than at any time since the holidays. White beans have advanced considerably and Limas are also in good shape. Potatoes are in large supply, while choice onions are scant and higher. Spring vegetables are in moderate supply and selling well when of the right quality.

The Tillering of Grain.

TO THE EDITOR:—What can you tell us about the tillering of grain? A bunch of wheat came up as a volunteer on my place which had forty-two heads, from which I shelled out and counted 2072 grains. I have planted these grains in drills 8 inches apart and the seed 1½ inches apart in the drill, and will keep all weeds out of it this season. What will the result be?—A. C. HULL, Santa Rosa.

This little item of experience is very suggestive. It renews the old question of whether the increased yield of widely sown and cultivated grain will pay for the increased cost of that method as compared with the ordinary broadcast culture. There is encountered at first the general presumption that cultivated wheat does not pay, for the proposition is an old one and yet has never prevailed as a practicable method. It has been theoretically advocated and subjected to systematic experiment for generations and increased yield has been amply demonstrated. Where an intensive system of farming is practised with free use of fertilizers and of cheap labor, results have been secured which more than compensated for cost of fertilizers and labor and were therefore profitable. This end was also promoted by the fact that the work was done in Europe and therefore enjoyed whatever advanced value there may be in proximity to the ultimate market. These precedents have very little applicability here where extensive farming, high wages and minimum market prices prevail.

The only recourse which seems to promise a way of making cultivation of wheat profitable lies in the employment of horse cultivators. This was proposed long ago, and a number of cultivators for wheat were placed upon the market. We are not aware that they were used for any length of time, and their abandonment, or perhaps rather their failure to establish the system they represented as a prevailing policy in wheat growing, creates the strong presumption against the profitability of the method to which we have alluded.

The free tillering of grain when it has light and space is one of the most striking invitations to open culture. There are remarkable instances. J. L. Thompson, Government Agricultural Instructor of New South Wales, states in the Agricultural Gazette of that colony that he found a wheat plant with 125 stalks and 125 perfect heads which contained a total of 6250 kernels. He has also seen a plant with 146 straws. These he claims exceed all European records. Major Hallet, the famous originator of barley varieties, grew a barley plant of 110 stems with 5000 to 6000 grains from a single seed. At the Maidstone Farmers' Club in England a wheat plant was shown having 105 stems from a single seed and bearing more than 8000 grains. So far, then, as tillering and immense production from a single seed is concerned, the matter is fully demonstrated. There have also been many instances in which thin seeding, using say twenty-five pounds of wheat to the acre, and sowing so as to admit of after culture, has yielded exceedingly large products, and the experiments have so electrified people who have seen them that many have been induced to attempt the method. In spite of this, all that now remains of the method is the use of the drill with the rows too near to admit of cultivation except harrowing to prevent a baked surface. Is this all that is practicable and profitable?

California has a considerable contribution to make to the history of cultivated wheat, but so far as we are aware it has not been definitely made out. There are scores of our readers who have done something in this direction and doubtless hundreds of them have done much thinking and talking about it. The only conclusion we can form from our records is that methods entered upon with much energy and anticipation failed to make any lasting impression upon the practice of the regions in which they were undertaken. But let us turn back and look upon them in the fervor of their beginnings. In the PACIFIC RURAL Press of May 17, 1879, these paragraphs are found:

Mr. C. V. Burke of Cacheville and Mr. G. C. McKinley of Dixon have been cultivating chiefly with the hoe a number of varieties of wheat to determine which were best suited to growth in the Sacramento valley. Mr. A. W. Morris is, however, probably the first to cultivate on a grand scale. Nearly his entire farm of 320 acres is planted in drills from 7 to 24 inches apart (the greater proportion 24 inches). The machine used is one of his own devising, with the capacity of cultivating about ten acres per day, or about the same number sowed in the same time by the drill. The cultivator has five rows of teeth or hoes with

from two to three of these in each, the rows at such a distance apart as to pass between the drills of wheat, thoroughly stirring the soil and doing much effective work. It is his aim, first, to determine, if possible, the kind of seed wheat best adapted to this locality; second, to find some means of counteracting the effects of drouth; third, a method of ridding grain fields of wild oats or other foul growths. As regards the last point, all the indications at this stage of the experiment may be said to be full of promise. The oats and weeds appear to have been pretty effectually subdued. The grain is clean, strong and thrifty, in addition to stooling out handsomely, contrasting very favorably also in growth and color with wheat left uncultivated for hay, while in other respects similarly situated and planted in the same way.

Here was a grand experiment undertaken with effective machinery and with very important ends in view other than wasting seed and increasing product. The foulness of the wheat lands is a growing evil. The combined harvesters have increased this evil by distribution of weed seed, while under the older system of heading or threshing from stacks and burning the straw in bulk and cleaning afterwards destroyed much of it. What has the result been of all the experiments which have been tried in this line? We apprehend that the practice has never prevailed because there are valid objections to it. We should like to hear from grain growing readers who have passed through some phases of the proposition as to its present standing in their minds.

THERE may be trouble getting grain bags enough this year. The Warden of the State Prison reports: Bags on hand, 822,000; carried-over orders from last year, 416,000; sold since Jan. 1, 1900, 261,000; total sold awaiting shipment, 677,000; on hand available for sale, 145,000. Raw jute on hand in the warehouse, 3357 bales, which will run the mills till June; contracted to arrive, 7000 bales, now loading at Calcutta. The mills will turn out 1,550,000 bags up to June 1st, making at that time a total on hand of 2,372,000. It is estimated that up to Sept. 1st 1,450,000 bags can be turned out, which will bring the supply to its maximum, 3,822,000, which is much less than the estimated demand. The directors decided to be very cautious in selling any large quantities of the output of the mills, and hereafter the maximum amount which will be supplied to any individual buyer may be even less than 2000. Owing to the additional cost of jute and the added expenses in running the mills, including needed repairs, the price of bags was raised from 5½ cents to 5.65 cents. This advance brings the cost of San Quentin bags within a fraction of a cent of the price of the Calcutta sacks and largely reduces competition.

ASSOCIATED efforts in fruit lines are advancing. The raisin combine is still in good shape and a mass meeting has been called in Fresno for Feb. 1st to take counsel in regard to the proposed combine of raisin packers and associated growers. It is proposed also to bring the fruit growers of Fresno county together and form a branch of the State Fruit Growers' Association. Other efforts supplementary to the San Jose decision are also being taken up, and work will be active in the propaganda next month.

Our report of the San Jose convention of fruit growers closed last week just as the election of directors from Santa Clara region was taken up. The five chosen were as follows: H. G. Bond, L. F. Graham, J. H. Henry, F. N. Woods and A. B. Fletcher. Subsequently, H. G. Bond was chosen president and J. H. Henry vice-president. An office has been opened at San Jose, and any communications our readers may desire to make may be addressed to the California Fruit Growers' Association, at that place.

THE Swiss are level-headed. United States Minister Leishman, at Berne, has cabled the State Department that the Swiss Government has revoked a former decision, and given general authorization for the importation of American dried fruits. It also authorizes the importation of fresh fruits, providing they are examined at Basle and found to be exempt from scale or other parasites.

THE bicycle has much to answer for. It is a sad fact that Prof. Henry A. Hazen, one of the chief forecasters of the Weather Bureau, died in Washington last Tuesday as the result of injuries received by a bicycle collision with a pedestrian. Prof. C. V. Riley, the well-known entomologist, went out by the same route a few years ago. Such losses are great and wide.

QUERIES AND REPLIES.

Adequate Moisture and Fruit Bearing.

TO THE EDITOR:—In the PACIFIC RURAL PRESS of January 6 you reply to my question as to why thrifty apple and cherry trees do not bear on the Santa Cruz mountains, that probably there is a lack of moisture in the soil late in the season. How can that be when we have 2 or 3 feet of rain and the forest trees near by are so vigorous.—SUBSCRIBER, Santa Clara.

It is not the amount of rain that falls in a locality which indicates its sufficient water supply. They have about as much or more rain in Shasta county and yet soils and slopes are such there that irrigation has to be resorted to early in the season and continued at frequent intervals. It is true that the evaporation in that county is more than it is with you, owing to the distance from the ocean, etc., but in many situations, at least in your county, fruit trees require a certain amount of additional water during the latter part of the season, just as much as other fruit trees require early and continued application of it. The growth of various forest trees is not always an indication of what fruit trees will do. The forest tree has a different way of rooting and is able to protect itself and to make its growth. Your fruit trees you say are always good in the matter of growth, but defective in the matter of fruiting. We hold that this is mainly due to lack of moisture just at the time when it is required for the completion of the fruit buds; either this, or you are subject to temperatures which interfere with bearing. This matter of moisture can be readily decided by occasionally digging holes in the latter part of the summer, say in July or the first part of August, to discover the amount of moisture in the soil at that time. If you will undertake to make such prospect we are inclined to think that you may find the cause of your trouble. Evidently the fact that so many of the trees in your region are unproductive and unprofitable is due to some general condition prevailing and not to any disease or other enemy of the trees which could be found by searching; in fact, any disease or enemy would soon destroy the thrift of your trees and that, in your case at least, has not been impaired.

Unprofitable Almonds.

TO THE EDITOR:—We have almond trees which are nine years old, splendid specimens, and yet do not bear fruit. What is the reason, and is there any hope for them by fertilizing? Our situation is rather low in the valley.—READER, Fresno.

The bearing of almonds is a problem in many parts of the State and very serious disappointments have resulted. So long as the trees grow thriftily and make the handsome appearance you speak of, there is no likelihood that the defect in bearing is due to the soil. The growth of the trees themselves shows that the soil is doing the best it can for them. Either you have planted some varieties which are rather shy in bearing (for there are some which are very much less satisfactory than others), or your fruit is destroyed by atmospheric conditions: either frost or wind, or something of that sort. Usually the barrenness of the trees is due to frost, for the almond is perhaps more susceptible to frost than any other of our deciduous fruit trees. There is nothing to be done, after trees have had a good trial, but to graft them over, or dig them up and make other use of the land. It is very satisfactory to graft the almond tree into the prune or into the peach. It is a fine deep-rooting stock, and is for that purpose chosen as a foundation for the fruits mentioned. It will not be satisfactory to graft apricots upon almonds, nor would apricots be likely to succeed, though they are hardier than almonds. This matter of grafting over is the only recourse left to you except eradication, as before mentioned.

Persimmons, Olives and Hot Bed Glass.

TO THE EDITOR:—What can the persimmon be grafted on? What is the stock for the pomelo? Had I better graft over Manzanillo and Nevadillo olives to the Uvaria? Where can I get glass for hot bed frames?—N. L., Merced county.

The persimmon can only be grafted on the persimmon. Sometimes the American seedling persimmon is used as a stock and the Japanese grafted into that. The pomelo can be worked on any other citrus fruit, but is usually budded or grafted on the orange. The Manzanillo olive in the San Joaquin valley is usually

satisfactory; the Nevadillo is less so; the Uvaria is a very hardy and prolific variety. We should be inclined to graft the Nevadillo with the Uvaria and retain the Manzanillo for pickling purposes on account of the size of the fruit—at least for further trial. Glass for hot house frames is usually bought of the dealers in window glass and they sometimes have a "double thick," which is less liable to breakage. However, for small sashes common glass of ordinary weight is satisfactory. You can order it in long, narrow panes, so as to give you fewer joints. If you want any considerable amount it should be bought by the box at wholesale rates.

Fat Percentage and Corral Grass.

TO THE EDITOR:—What increase in butter fat can be expected from crossing a Durham with a Jersey? I have a Durham heifer which gave me forty pounds of milk per day after having her second calf, but she only tests 2.6%—this on alfalfa hay with no attempt made to balance the ration. Is there any grass which forms heavy enough sod on heavy alluvial soil to bear cattle during wet weather? I wish to have a small field in which to exercise my milk cows in winter—an acre or two for forty cows. Winter pasturage is no object, simply cleanliness. Would Bermuda grass do?—F. B. MARKS, Dos Palos, Cal.

You could hardly fail to improve the fat percentage of your cow's offspring by crossing with the Jersey. It would not be surprising if it were increased 2%. Any kind of a decent dairy bull would increase it somewhat, for it is abnormally low.

Bermuda grass would not give you a green turf in the winter, but it would fill the soil so full of roots and leave such a mass of dead stems when the frost comes that it would be hard to make mud of the surface with the amount of rain which usually falls in your region. We presume Bermuda grass would give you cleanliness in your corral, but we would not answer for your moral cleanliness when the Bermuda gets out into places where you do not want it. We do not know of any other grass better for the purpose named.

Plants for Poultry.

TO THE EDITOR:—What crops shall I grow for green feed for my poultry? —READER, Yolo county.

You do not say whether you desire winter or summer growth. Among the best things for winter growth in such a locality as you have would be Jersey kale and perhaps some of the other plants of the kale or cabbage family, which are quite hardy, also field peas and the hairy vetch. For summer growth, if you have irrigation and suitable soil, nothing would be better than alfalfa; but where the soil is apt to dry out in the summer, the sorghums, including Kaffir corn, will give very satisfactory growth, both of green stuff and seed, on soil which is too dry for other plants. On waste lands salt bushes are proving very valuable as green feed for summer. Some readers write us that the only trouble with these plants on dry lands is that the poultry eat them down so close that they die out.

To Clean Fruit Trees.

TO THE EDITOR:—I have charge of an old apple orchard the trees of which are almost completely covered with a growth of moss. Last year I gave them what I considered to be a very thorough spraying with lime, sulphur and salt, but with very little apparent effect. Would spraying with caustic soda be more beneficial? If so, please give directions for using.—O. L. CRANE, Santa Rosa.

Use caustic soda (Greenbank 98%) one pound to six gallons of water.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, January 24, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Minimum Temperature for the Week.....	Maximum Temperature for the Week.....
Eureka.....	.30	33.46	17.68	22.22	30	58
Red Bluff.....	.02	14.79	13.12	13.76	43	70
San Francisco.....	.04	13.33	7.85	10.42	38	52
Fresno.....	.00	14.38	7.67	12.46	42	64
Independence.....	.00	6.12	3.84	4.69	38	52
San Luis Obispo.....	.00	2.08	1.15	4.09	32	66
Los Angeles.....	.00	12.41	6.87	10.37	40	80
San Diego.....	.00	4.57	2.94	8.56	40	82
Yuma.....	.00	2.60	3.43	4.69	46	78
	.00	0.66	1.33	1.89	38	78

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 22, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

The beginning of the week was marked by light rains in the northern part of the State. The rest of the week has been without rain except in the extreme northwest, and occasional sprinkles in the southern portion of the Sacramento valley. South of the Tehachapi the weather has been for the most part fair. Some light to heavy frosts were reported in the orange belt on Wednesday and Thursday mornings, but no damage occurred. Some of the evening temperatures were quite high. Tule fog has prevailed in the valleys of northern California, almost without interruption during the week. This continued foggy weather has kept the soil in such a moist condition that all farming operations are seriously retarded. On the other hand there have been no drying winds, and the lack of rainfall is less noticeable. Good heavy rains, followed by drying, warm weather, would materially alter the appearance of the crops. From some sections in the San Joaquin valley, there are reports of ground fog so dense as to obscure the sun for a period of several days. The foggy weather has retarded budding of apricots and almonds, which on the whole is beneficial at this time. Almond trees are swelling to bud. Feed is abundant, and on the uplands farmers are plowing and seeding.

The normal rainfall for this period varies from 1 inch in the southern part of the San Joaquin valley, to 1 inch in the northern part of the Sacramento valley. The absence of rain was a great benefit, in that it has permitted the rivers of the Sacramento valley to fall to a normal stage. From a stage of 27 feet on January 9, the river at Sacramento has fallen slowly to 24 feet. In all probability, a large portion of the early snowfall on the mountains has been melted and carried seaward.

SACRAMENTO VALLEY.

The precipitation was far below the normal. The week has been almost incessantly foggy. On the lowlands the ground is too wet to be worked. On the uplands farmers are plowing and seeding, and some are planting potatoes. The temperature has been above normal. Fruit buds are swelling, but the foggy weather is rather holding back almonds and apricots. A little warm weather would hasten budding. Apricot trees, in some sections, are reported to be barren of buds. Some pruning has been done, and a little plowing. Some deciduous and citrus trees have been planted. Near Oroville it is reported that the snow supply in the mountains to date is not thought to be sufficient for summer work for mining interests. It has been noted above that the full stage of the river rather indicates a rapid run-off of the early snow. Vegetable growers are preparing the ground for seed, and a large acreage will probably be planted. In general, but little work was done by farmers and fruit growers during the week. Grain is growing nicely, and green feed was never more plentiful.

COAST AND BAY SECTIONS.

Very little rain has fallen, except early in the week. Foggy, cloudy weather prevailed almost uninterruptedly. The ground is quite damp, however, and there have been no dry winds. Farm work is progressing slowly. Plowing, seeding and pruning are being carried on as the weather permits. Feed and early sown grain are making rapid growth. Almond trees are reported to be in bloom near Santa Rosa. Pasturage is in excellent condition, and stock are fat and well fed. Vegetables are growing nicely. Some sugar beets were left in the ground.

SAN JOAQUIN VALLEY.

The weather has been foggy and damp. In portions of the valley the low, dense fog obscured the sun for several days. Plowing and seeding on light land are going on. Grain and pasturage are growing fast, and prospects for good crops are very flattering. Work in the orchards and vineyards is progressing, and there is much pruning of vines and trees. The grain acreage will be large and farmers expect good crops. The foggy weather has the beneficial effect of retarding the budding of apricots and almonds. Green feed is abundant. In the hills, warmer and bright weather is reported, in marked contrast with the heavy fogs prevailing on the level lands. Near Merced, sandy land is reported to be in good condition, and nearly all the grain is in; on the heavy lands, foggy weather has retarded plowing and seeding.

SOUTHERN CALIFORNIA.

The weather during the week has been generally warm and favorable for all crops. As a rule the mornings have been cool, and the afternoons rather warm than the normal for this period. No rain fell during the week and while there is as yet a good supply of water, rain would be welcome, and is needed to supply the ground and replace the heavy demands of the past two years. Light frosts have been reported, but no damage was done to citrus fruits. No killing frosts were reported and vegetables were not injured. Vegetable and grain crops are doing well; the latter are reported to be in excellent condition. Orange picking is well under way, and both yield and quality are reported to be good. In the extreme south, easterly and northeasterly winds on 18th and 19th did much toward drying the soil. Oranges are said to be of medium size, and in many orchards smaller than those of last year.

EUREKA SUMMARY.—Rain during fore part of the week. Ground drying slowly. Some plowing on high lands. Grass still abundant, and stock is in excellent condition.

FORESTRY.

The Farmer and the Forests.

Written for the PACIFIC RURAL PRESS by CHARLES H. SHINN, Inspector of the University Experiment Stations.

There has never been a time in the history of California when so many persons were interested so intelligently in the preservation and proper utilization of our forests. One can hardly open our country newspapers without noticing editorials showing that the recent visits of Gifford Pinchot, the capable chief of the Forestry Division at Washington, and some of his assistants, have had an excellent effect in arousing public attention.

Every farmer should take an intelligent interest in the proper care of our California forests. They should be very dear and near to his heart, and he should think of their management as, after all, based upon the same principle of agriculture which he tries to follow in his own ancient and honorable business. There is certainly a point of view—and one that writers upon forestry topics too often neglect—according to which all the timber lands of the State may be called but a vast wood orchard, a forest farm whose slowly ripening crops are harvested from time to time. Rightly, then, it should be properly sown and properly harvested, at the intervals shown by experience to produce the largest crops.

Practical forestry is really not unlike practical wheat growing, or practical orchard planting, except that it moves in such long periods of time that it needs the fostering care of governments and strong associations until its requirements are everywhere understood. Everything yields after its nature: the alfalfa field three to five times a year; the wheat annually; the cabbage seed biennially; the tannin-bearing acacias once in ten years; the Douglas spruce forest once in fifty years. There are soils and situations, too, for every different kind of farm crop—and there are immense areas of land which can be used only by planting them to timber crops.

Suppose that a new continent were to be discovered where wheat grew as abundantly as do our wild grasses, and where excellent apples and apricots hung on the shrubs. If the pioneers of such a land grazed the wild wheat acres, or cut the apricot thickets for firewood, disregarding the laws of higher usefulness and carefully managed reproduction of these crops, the time would soon come when the land would be a barren waste. The law of the wheat field, that it must be protected and allowed to grow until it is fully ripe, and fit for use, is also the law of the century growing forest and both alike are shapen to the needs of man.

It must be because the essential unity of the forester's work with all correct agricultural practice is overlooked, that one sometimes finds farmers speaking of the talk about saving the California forests as merely a cry of maudlin sentiment. "We must have firewood and lumber," as a man once said to me, and he added, "You University fellows want to have the Government preserve the forests so that lumber will cost a lot more than it does. All you want is better hunting and fishing."

The use of this word "preserve" has often seemed unfortunate. What we really want is a better utilization of all our forest resources. What we really mean is that we wish to prevent waste and destruction, to increase the forest supplies, to multiply its manifold uses and to cheapen in the long run all its indispensable products. We really mean by "preserve" and "protect" exactly what the farmer means when he fences his wheat field, and cultivates his orchard.

How simple and how reasonable it seems—this utilitarian view of the forests of the State! There is a large portion of California that is worthless for any other purpose except to grow trees and scanty pasturage. It is many times more valuable for growing a timber crop than it is for sheep, goats or cattle. It is without any other agricultural value. Let us grow timber there, and let us grow it in a systematic and careful way. We can greatly increase the average, annual yield of the land; we can have an absolutely safe revenue for all time to come.

The practical forester says: "Here is a hundred thousand acres of mountain land, covered with wild forests. Some of the trees are mature; they will not grow much larger in a hundred years, and so I will sell them to the lumberman. Some of the forest consists of poor kinds, and I will gradually replace those trees with more valuable sorts. In some places I can thin the forest, in others I must have 'mother trees' and let seedlings grow in brave young thickets. In the course of a century, I can very greatly increase the value of this hundred-thousand-acre forest."

Because it takes so long to carry out such far-reaching plans, should the farmer who has passed from annual crops to thirty-year rotations of orchards fail to greet the forester as a brother of agriculture?

The farmer himself will often discover that the right practice of agriculture upon his own farm includes much forestry. He will need a wood lot, or waste and rocky areas can be devoted to the growth

of timber. He may possess tan-bark oak, or redwood, or pine, or eucalyptus forests, and here he can apply the same good old principles to protect his crop till it matures, and then to gather in due season its increase,—nor need he wait a lifetime in this land of rapid growth.

As shown by their interest in recent forestry meetings, the leading lumbermen of California recognize the fact that their business depends upon better knowledge of forestry methods. When our forests are destroyed, the lumbermen must plant more, at great cost, and wait for many years for them to grow, or else they must go to the Congo and assault Stanley's "Great Equatorial Forest." Every thoughtful lumberman knows that he is taking from the future. Now that he better understands the subject, he begins to take a prominent part in forestry organizations.

Farmers should be especially active in every forestry association and public meeting, to secure legislation or congressional action. The farmers of California as well as the lumbermen are vitally interested in the preservation of their forests. Farming cannot long continue in a country whose forests have been destroyed. This side of the subject has been explained in a thousand ways, but its immense practical importance justifies its presentation over and over, until ever farmer takes an active interest in forestry topics.

To sum up this brief paper, forestry is primarily forest study and forest care. The crop of forests consists of firewood and timber. That crop can be increased and made more valuable by employing skilled foresters. The proper management, both governmental and private, should receive the support of the farmers of California, since neglect and ignorance of forest affairs will work such vast and irremediable ruin. Under the conditions of life in this Republic, it is necessary only that enough people shall work together long enough to produce any desirable result. Let the farmers and the lumbermen, therefore, decide to put the management of all our California forests upon a scientific basis.

Berkeley, Jan. 17, 1900.

CEREAL CROPS.

Kafir Corn.

It is too soon to sow Kafir corn of course for that must be done after all danger of frost is over, but it is just in time to consider the facts about a grain which is becoming of incalculable value in California and to other States with dry summers. The Kansas Experiment Station publishes some new facts about the grain as grown in that State. Kafir corn is grown in every county in Kansas, Secretary Coburn reporting 582,895 acres in 1899 for the State. It has been raised on the Kansas Agricultural College farm for the past eleven years, and they recommend two varieties—the red and black-hulled white. For the first seven years they raised the red. The black-hulled white was then introduced, and from 1896 to 1898 they grew these two varieties side by side, the red giving an average yearly yield of thirty-seven bushels per acre and the black-hulled white forty-three bushels per acre. They now raise the black-hulled white only. In western Kansas many farmers think the red a little harder in drought.

Kafir corn makes a slow early growth and should not be planted until the ground becomes warm. On cold soils surface planting is best; on warm soils listing does well. Plant in rows 3 to 3½ feet apart, dropping single seeds an inch apart in the row. Cultivate the same as you would for a good crop of corn. Many farmers sow Kafir corn broadcast, cut with a mower, handle and feed as hay.

When grown for grain, the heads may be cut off and gathered if the fodder is not wanted. When the fodder is to be used, the cheapest method of harvesting Kafir corn is to cut and put it up in large shocks.

COMPARED WITH INDIAN CORN.—The College farm is upland. In the eleven years that they have grown Kafir corn there has been but one failure to produce grain. In 1894 Kafir corn yielded no grain, but gave two tons of fodder per acre. Corn the same year yielded no grain and one ton of fodder per acre. The average yield of grain per acre on the College farm for the past eleven years has been, per year: Kafir corn, forty-six bushels; corn, thirty-four and one-half bushels. The highest yield per acre in one year has been: Kafir corn, ninety-eight bushels; corn, seventy-four bushels. In the western half of the State the difference in favor of Kafir corn is greater, as there, in dry years when corn yields one to five bushels per acre, the yield of Kafir corn is twenty-five bushels or more.

FEEDING VALUE.—A bushel of corn is worth more for feed than a bushel of Kafir corn, but an acre of Kafir corn is worth more than an acre of corn. The average of the results where they have fed corn against Kafir corn in fattening hogs shows twelve pounds of pork from a bushel of corn and ten pounds of pork from a bushel of Kafir corn. This shows an average yield of grain per year per acre to produce

460 pounds of pork from Kafir corn and 404 pounds of pork from corn.

The relative values of corn and Kafir corn are practically the same for beef production as for pork.

KAFIR CORN FOR THE DAIRY.—Kafir corn grain and alfalfa hay make the cheapest combination of feeds in Kansas for milk production. Kafir corn meal is especially valuable to feed calves raised on skim milk. Its constipating effect offsets the loosening tendency of the milk.

Animals tire of Kafir corn alone more quickly than they do of corn alone, but combined with other feeds they relish it for any length of feeding.

FOR HOGS.—In three experiments in fattening hogs a mixture of Kafir corn four-fifths and soy beans one-fifth gave a gain per bushel of feed of over thirty-six per cent more than Kafir corn alone. Hogs fed Kafir corn and alfalfa hay gained ninety-one pounds each, while hogs fed Kafir corn alone gained fifty-two pounds each. Hogs fed Kafir corn and five pounds of skim milk each per day gained sixty-six pounds per hog, while those fed on Kafir corn alone gained forty-two pounds each.

Kafir corn is the best drought resisting grain feeding crop and the heaviest yielder on poor soils. They recommend it in place of corn for the uplands of eastern Kansas and for all soils in western Kansas. When this recommendation is followed and the Kafir corn is fed with drought resisting feeds rich in protein, the beef, pork and milk production of Kansas in dry years will be equal to that of the best years now without more acres being planted. Very many of these facts are directly applicable to California.

THE DAIRY.

The Silo.

By J. W. McKELVEY, Clearwater, at the Southern California Farmers' Club Institute.

To dairymen generally the severe experience of the past two seasons of drouth has been of much benefit. It has taught them primarily the necessity of having, first, sufficient moisture to produce ample crops; second, sufficient storage capacity for the crops raised.

The rapid development of water for irrigating purposes by every process known to man is a favorable sign for sufficient moisture, and the increasing interest of the dairyman in matters pertaining to feeding for profit are sufficient evidence of his intention at least to store and care for the product of the soil and his labor that it may be fed at the proper time and in the most profitable and satisfactory manner.

The thoughtful dairyman is beginning to realize that in order to keep up with his business he must necessarily be at least one year ahead of it, and that in order to provide bountifully for his herd he must take advantage of a year of plenty that he may overcome a year of drouth.

A PROVIDENT POLICY.—To successfully carry out this policy there is no better method, to my mind, than to have, in connection with good, roomy barns, the silo. By its use we can get more cheap, succulent, nutritious food in less space than in any other manner known. We can put away for to-morrow, or next year, what we do not need for to-day. By using ensilage in connection with good alfalfa hay we are enabled to have a good, substantial foundation for a ration every day, instead of some days. By the use of the silo we can save the time, labor, annoyance and expense of one or two trips every day to a cornfield at all stages of maturity, by bringing in the whole crop, properly matured, in one day. What in the morning was a wilderness of cornstalks, at night is in the silo, safe for future use, and the ground is cleared and ready for instant cultivation.

It used to be a saying of an elderly neighbor of mine when feeding corn fodder, that "it takes the strength of the ear for a cow to subdue the stalk," and no man who has fed ensilage and corn fodder will question the correctness of the old man's conclusion.

These are some of the advantages to the dairyman who is possessed of a silo, and the longer he feeds from one the more he learns to depend on it, and the more he wonders how he ever attempted to keep in the procession without one.

BUILDING THE SILO.—For all practical purposes, in this and most other localities, the plain stave, circular silo is the cheapest, the most satisfactory, the simplest in construction, the easiest kept in repair, and the easiest fixed when out of repair. Should you ever wish to move over from one place to another, it can be taken down and set up in first-class condition in less time than any other style.

For the larger sizes of silos there should be four 4x6 inch posts running the full length. The staves also should run full length, doing away with short jointed pieces, which are sometimes very annoying. The staves can be either jointed or rough, according to preference, as either, when properly drawn together, will exclude air. For perfect safety there should be at least one hoop for every 30 inches in height. The extra expense will be trifling compared to the satisfaction of knowing the job is well done. A

foundation of 2-inch rough redwood plank, laid level on mudsills 2 feet apart, will prove as satisfactory as any other kind.

A bell-shaped tent of heavy canvas, smeared over with paraffine paint, will make a light, easily adjusted and satisfactory cover.

The doors should be sawed out, after the silo is up, and beveled all around to the inside to prevent binding. For silos 20 to 24 feet in height there should be at least three doors, and for those from 26 to 30 feet in height at least four.

SIZE OF THE SILO.—The size of the silo depends entirely upon the number of cows to be kept. This is computed upon the basis of an allowance of forty pounds of ensilage per day for each cow. Where root crops and other succulent foods are given in liberal quantities, the amount of ensilage fed may be reduced. For any number of cows above ten, I would build no silo less than 30 feet in height nor more than 16 feet in diameter, preferring to go to the extra expense of building two smaller in diameter than one larger, with too much feeding surface exposed. The smallest practical silo would be about 8 feet in diameter and 20 feet in height. This would hold about twenty tons of ensilage and would feed four cows 250 days.

In our community the average settling of silage in tanks 24 feet in height, after filling and refilling, was about 10 feet. That in my silo, 30 feet high, settled 16 feet. It is the rule that, in building less than 20 feet in height, silage needs additional weight to help settle it, while the greater the height the more it settles itself.

CROPS FOR THE SILO.—Almost any of the forage crops except the hollow-stemmed varieties make satisfactory ensilage. By far the most popular of all crops raised for this purpose is corn. The small cost of seeding, cultivating and handling, the high feeding value and enormous yield over other crops are the reasons for its popularity. To make good ensilage, corn should be past the roasting-ear stage, otherwise it will come out of the silo watery and sour. Alfalfa for ensilage should be in bloom, the stems rather woody, as the intense heat to which the mass is subjected will cause it to come out of the silo soft and palatable. I have seen several fail in siloing alfalfa because they put it in too green.

From three acres of measured land which was planted to corn the 20th day of last June, after a crop of barley had been taken off, I put into the silo fifty tons of ensilage. The corn was planted double-row, rows being about 20 inches apart. While the corn grew to be too rank and thick to ear heavily, yet it is proving a very satisfactory feed. The actual cost of growing and harvesting the crop was:

Half rent three acres land, at \$5.00 (which had made hay crop).....	\$ 7 50
Irrigating, fourteen hours at 75 cents.....	10 50
Twelve men working one day, at \$1.50.....	18 00
Four teams, at \$1.00.....	4 00
Cutting of fifty tons ensilage, at 20 cents.....	10 00
	\$50 00

Just after the fire, which destroyed the Lankershim mills, a gentleman in our community bought a pile of 250 sacks of rolled barley, which had been damaged by water, for \$10. A car from Los Angeles to Hynes cost him \$10. He dumped the barley into his silo on top of corn ensilage, and what he has not fed of it is there to-day in as good condition as it was the day he bought it. I never saw hogs do better than his are doing on a liberal supply of skim milk and rolled barley.

FEEDING SILAGE.—Some people still exist who question the merit of silage as a fit food for cattle, who advertise their ignorance of the subject by basing their judgment upon isolated cases where, for lack of experience and common sense, the ensilage was improperly put up and thus allowed to spoil.

It takes judgment and experience to properly feed a cow, and it requires more judgment and more experience to prepare her food properly for her. The very fact that almost the entire high-class milk trade of the great Eastern cities is supplied from cows fed extensively on ensilage is proof positive that such milk is of good flavor and good quality.

The introduction of the silo as one of the essential features of the modern dairy farm has been an incentive to greater things for the dairyman. It has brought to him the assurance that, in connection with the barn, when seasons fail, he may have stores laid by in abundance. With this assurance has come the inspiration to push on to perfection, to study the wants and temperament of the individuals of his herd, and to supply them persistently, thereby increasing to the full limit the production of each animal.

Care of the Dairy Cow.

At the recent convention of dairymen of the State of Washington one of the most valuable papers read was that on "The Care of the Dairy Cow," by A. M. Stevens. In part the paper is as follows:

HER ANCESTRY.—Perhaps the best time to begin the care of the dairy cow is to begin with her grandmother. Then we may expect that her mother will be born right, and as a consequence we will have a cow that has inherited a dairy capacity which may

or may not be developed, owing to the environment in which the cow is placed. But all cows are not born with the same dairy capacity, and therefore are not all capable of the same dairy development.

HER MOTHERHOOD.—Perhaps the best age to breed is to have her freshen at from two years old to thirty months; would prefer to have her freshen at thirty months of age rather than in the winter, unless she can have good, comfortable quarters and an abundance of succulent food, either roots or silage. As a heifer she should be handled, petted, if you please, and accustomed to being with the cows and taught to know that you are her best friend. She should be fed so as to keep a continuous growth, not fattened nor stunted, but kept in a vigorous condition, and if pasture is not sufficient for this, would supplement it with wheat bran, ground oats or barley. The wants of each individual is the only guide as to how much to feed.

If they are allowed to get poor in flesh, it will take valuable time and feed to get them in condition to do good work. As they approach the period of freshening it may be well to stimulate them with a little wheat bran or ground oats to the end that they may fill up a good udder. Remember, this is for heifers with first calf. Perhaps when the cow freshens the first time is the most important period in her life, as her future usefulness depends on how she is broken in to milk. Great care should be taken that she is properly handled. A rough milker may make a kicker of her, and a poor milker may retard her development by not milking clean and promptly. She should be handled with a light hand, especially so if her udder is swollen and tender. No scolding should be permitted; a calf never says a word while sucking, neither should a milker while milking. If her udder is much swollen, foment it with warm water and use much massage, rub it dry and anoint it with fish oil; with one part of iodine in ten parts of oil, which will be found useful with which to thoroughly anoint the udder.

Usually the calf may be taken away from the cow in from one to three days, but if she frets for the calf place it where she can see it, as it quiets her. We would not feed much, if any, grain until the fever has left the udder, but give plenty of succulent food.

CARE AND PREVENTION.—As the cow grows older we would not feed much, if any, grain just prior to freshening, as there may be a tendency to milk fever. Perhaps it is best to regard all cows at the calving time as sick cows and guard them from exposure to storms and becoming chilled. A good box stall, kept clean and well bedded with straw, is essential in cool or stormy weather, and a blanket may also be necessary. Give her water to drink that has had the chill taken off, and, if possible, keep the bowels free with succulent feed and with physic if necessary.

We confess to a personal knowledge that, to attain success, the dairyman needs developing as well as the dairy cow. It is well said that the modern dairy cow is a human invention as much as the shepherd dog or the greening apple.

Milk-giving is a function of motherhood, and the dairyman, having supplanted the calf in appropriating the milk for his own use, should try to supplant the calf, in a measure at least, in the cow's affection. The dairy cow is a highly sensitive mother, and nothing can take the place of kindness in caring for her. Her life is passed in gestation and milk-giving, and with proper care only demands enough food as a ration of maintenance to sustain life and give energy to properly nourish her progeny. And the more generously she is fed the greater returns may be expected.

CONSTITUTION.—Constitution in the dairy cow does not consist in ability to withstand the rigor of the climate, but in ability to digest a large amount of food and convert it into dairy products. It is an old saying that the wind is tempered to the shorn lamb, and in the case of the dairy cow that is exposed to the wintry blasts around a straw stack or the lee side of a wire fence and given ice-water to drink nature comes to her relief and shrinks the production of milk, thickens her hide and enables her to grow a crop of hair in an effort to keep herself warm. But why cannot the dairy cow stand as much cold or exposure as the range or beef cattle? The range or beef cattle have stored up a surplus of fat between the muscular tissues; also between the flesh and skin. In short, they have become fat, not to supply us with prime roasts and steaks, but for their own use in an extremity of weather or shortage of food, and when turned to the straw stack to winter their ration consists of fat and straw.

When winter is over this surplus store of fat has been consumed in the effort to sustain life, while the dairy cow has converted the food digested daily into dairy products for which the dairyman has received value.

A GOOD fire extinguisher is made as follows: Eight parts common salt, six parts sodium bicarbonate, two parts Glauber's salt, two parts calcium chloride, two parts sodium silicate. Another mixture to put out a fire is made of: sal-ammoniac, 5%; sodium sulphate, 30%; sodium bicarbonate, 20%.

THOUGH divisible by four this will not be a leap year. No leap year occurs between 1896 and 1904. Every fourth century has twenty-five leap years. The next century, the twentieth, will thus be one day longer than this one is.

THE POULTRY YARD.

Treating Sick Fowls.

TO THE EDITOR:—Under this head an article was copied in the PACIFIC RURAL PRESS from a writer in the Sonoma County Farmer in which he detailed his practise with kerosene for throat trouble. He omitted to tell whether that particular fowl recovered, or what per cent of treated cases recovered. That would be an interesting addition to his notes.

CHICKEN CHOLERA.—It may interest your readers to learn of our success with chicken cholera. Only one visitation of the disease occurred. Early in April a hen became sick and dumpish with a dark comb; all food and water refused. It was thought useless to treat this case, but Epsom salts were administered and this was followed with copious watering put in the mouth with a spoon. The hen was placed in a warm, sunny place, isolated from usual runs, and recovered very slowly.

Another hen died in a few days and then another and a cockerel, and several persons who had had experience with cholera pronounced this case to be cholera. The hen and cockerel died near night, and next morning two other hens were dead and eight more were in different stages of the disease.

Treatment was begun at once. Two hens were killed and buried as those previously dead had been. The six were brought out into the sunlight and given salts and water.

THE TREATMENT.—The house and yard were thoroughly disinfected with one pint of strong sulphuric acid to eight gallons of water, as suggested in poultry books. The hens themselves were sprayed with this. Their drinking water was charged with carbolic acid (one teaspoonful to half gallon water) and asafetida was put in their food at the rate of one heaping tablespoonful to the food of thirty chickens.

The next morning six hens could not get off the roost, though all but two had gone up as usual the night previous after their treatment. These were treated as before and put outside the yard. Before night all but four hens were walking about, pecking grass. After three days of isolation these four were returned to the yard cured, and all have been in good health since. Six hens and a cockerel were lost before the health of the flock was restored by the treatment as given above.

PROMPTNESS A REQUISITE.—Had we known the disease at first it is doubtful if a single bird need to have been lost. Promptness to disinfect and treat the sick birds will save many losses. The doses of salts, not before recommended to my knowledge, doubtless helped rid the birds of the cholera bacilli sooner than if it had not been given, and so hastened the eradication of the disease. The asafetida acts as a diffusible stimulant to help keep the birds warm.

The drinking water was for some days kept charged with carbolic acid, and all that is now needed to secure immunity from another attack is a second thorough disinfection and to continue for some time the addition of carbolic acid to the drinking water.

F. E. EMERY, Agriculturist.

North Carolina Experiment Station, Raleigh.

Poultry Discussion and Exchange.

TO THE EDITOR:—Through your esteemed paper we subscribers get about all good advice that is current, concerning matters agricultural, and especially so in the poultry line. Much of this advice and information is easier to accept as truth than to follow. For example, we are advised to raise only pure-bred fowl and to change stock frequently to avoid inbreeding. I find this a difficult matter to accomplish. I need 200 to 300 breeding hens (Buff Leghorns), which calls for twenty to thirty cocks. To secure such a number of male birds of new blood is my greatest difficulty. I have not found it practicable to maintain my own breeding pens so as to secure this new blood. I cannot find the birds I desire among the poultry fanciers, even at fancy prices. At the same time I am sending to market every season scores of young birds quite good enough for my purpose but for their kinship to my hens. Now, doubtless there are other poultry raisers who experience the same difficulty. It occurs to me that if I were in touch with these other producers of the Buff Leghorn, we could lift one another out of the mud by a simple exchange of birds. Such a plan would be in line with the practise in some of the older countries, where live stock exchanges are regularly organized, and their operations greatly facilitated by the aid of the agricultural journals and other popular newspapers.

Could not the PACIFIC RURAL PRESS do something in this line and thus bind its subscribers by another tie of usefulness. I would be very glad to get into communication with any who are raising the Buff Leghorn for practical purposes—the egg box and the market.

W. B. JOHNSON.

Merced.

[Certainly, let all our poultry growing readers become acquainted with each other by maintaining active discussion of poultry interests and methods in

our Poultry Department, and they can then easily arrange exchanges by private correspondence. Begin at once: let us have two or three letters for next week.—Ed.]

Santa Clara Poultry and Hare Club.

At the last meeting of the Santa Clara Valley Poultry Club, as reported by the Mercury, President E. Van Every reported that the Golden Jubilee Poultry Show, held in December, was a success financially and otherwise. The increased attendance evidences the fact that there is a renewed interest among the people in blooded poultry. The large showing of Belgian hares was an added attraction. The Belgian hare industry, which has assumed such large proportions in Colorado and southern California, has been taken up by many members of the club, some of whom are already prominent among breeders of the hare. Several, not now members, having signified their desire and intention to join the club, a resolution was passed that the name of the club be changed to the "Santa Clara Valley Poultry and Hare Club."

"The Original" Harker & Berrar Belgian hare score card was presented at the meeting and was unanimously adopted as the official score card for hares to be used at all future shows held by the club.

The annual meeting of the poultry club is to be held at 40 North First street, San Jose, at 2:30 o'clock January 28th, at which time several new members will be taken in and officers for the year will be elected.

The members of the club feel highly gratified at the evident interest manifested in thoroughbred poultry and feel that their efforts to better the class of poultry kept in the valley are bearing fruit. They are already planning that their next annual exhibition, to be held November 14 to 17, 1900, shall be the banner show of the coast.

HORTICULTURE.

The Subsoil Plow in the Orchard.

By JAMES H. REED, Riverside, at the Southern California Farmers' Club Institute.

New and difficult problems are constantly rising in orchard management, not because we have not made real and large advancement in these recent years, but rather because of this advance. The more proficient we become, the better we understand the requirements of the orange tree, that it may do its best.

THE HARD LAYER.—One of the problems now attracting considerable attention, is how to get rid of and how to prevent the formation of the hard layer of earth sometimes found just underneath the cultivated portion of the surface. This stratum, varying from a few inches to a foot or more in thickness, is sometimes found so dense as to seriously interfere with proper irrigation. Its principal cause is doubtless found in frequent and considerable drying out of this sub-stratum after irrigations, as the surface would, were it not carefully stirred, only to a lesser degree.

BREAKING IT UP.—A subsoil plow is being introduced to break up this hard layer. It is run to the center of the spaces between the trees, usually once each way, from 12 to 16 inches deep. It does not disturb the surface, but lifts the subsoil sufficiently to loosen it to width of from 12 to 20 inches on each side of the plows. The draft where the ground has become hard is necessarily heavy, requiring from eight to ten good horses. These narrow broken spaces take in the water readily. How long it will take to work out through the unbroken squares till the entire root bed is wetted, and how permanent may be the results, are questions yet to be determined. If followed by the same general treatment, the hard layer will doubtless quickly appear again, and the special process need to be repeated.

INJURY TO ROOTS.—An important consideration is the effect of the disturbance of the roots necessarily made by this deep cutting. In orchards under ten or twelve years old, the leaders have not become large at that distance from the tree, but the entire space of the root stratum between the trees is filled with roots from the minutest fibrous to the larger branches of the leaders, at a very early age.

I found on examination, where they were running the plow but 14 inches in an eight-year-old grove, many roots were cut from $\frac{1}{4}$ to $\frac{3}{4}$ of an inch in diameter. To get full force of this we must remember that a root, even $\frac{1}{4}$ inch in diameter, may extend several yards from the point of severance, with thousands of branchlets all bearing the hair appendages that take up the trees' nutriment. This constitutes pretty severe root pruning. But there may be cases where the advantage to the remaining roots may more than make up for this loss. In any event it would be greatly better not only if this root prun-

ing but the very considerable expense of the deep plowing need not be.

TO PREVENT ITS FORMATION.—I am strongly of the opinion that by guarding against the formation of this objectionable layer while orchards are young that it may be prevented. This is founded upon a considerable experience in soils varying from stiff adobe to sandy loam. You will allow me briefly to illustrate:

Once a year, with a walking plow, we break up as much of this layer that is liable to become hard as can be done without serious injury to the roots. With this annual plowing we have found no difficulty in getting water into the main root stratum, lying immediately underneath, by careful irrigation during the season. As aids to the thorough irrigation needed, I desire to speak of two or three things which we have found invaluable.

First.—We make our irrigation furrows as nearly the depth of the annual plowing as possible, thus putting the water nearest where needed—greatly reducing the surface saturation, where so much water is often wasted—facilitating the early covering of the furrows after irrigation.

Second.—Any portion of the orchards where there is special occasion, we cross furrows before making main furrows. This done, with a little head work, the short pieces of the cross furrows are easily kept filled.

Third.—We run water three days (total amount the same) instead of two, as formerly. We find the third day leaves more water in the ground than either of the others.

AFTER CULTIVATION.—To keep the sub-stratum from drying out is as important as to get it wet. Our method of doing this is by covering the furrows as soon as possible after irrigation—often within twenty-four hours—in order to stop the pumping of moisture from the saturated bottoms. This is done by dragging an upright plank lengthwise of the furrows, pulling in the shoulders and lightly rubbing over the balance of the surface. We then thoroughly cultivate with an implement that breaks up all the ground to a good depth, without bringing any of the saturated soil to the surface. After which the surface is kept loose with a fine-tooth harrow. There are, doubtless, better methods of accomplishing the purpose, but even with these I feel quite confident that the need of the subsoil plow may be avoided, save possibly in orchards where the hardening process has been going on for a long time, and the root stratum has worked up too near the surface for deep general plowing. In such cases the new plow may prove an important orchard implement.

In-Arching Trees Injured by Gum Disease.

TO THE EDITOR:—We had some eight or ten trees in our lemon orchard which had been doctored by various methods for gum disease; some were completely girdled, some only half way around. All of the trees had gummed about the bud from usual causes and looked, as diseased trees generally do, yellow and sickly. About six months ago I noticed some suckers coming up from the roots which, upon examination, proved to be healthy and vigorous. It occurred to me then that if I could unite these suckers with the sickly looking tops of the trees above that part of the trunk where the bark had been cut away, I might help the tree to recover or save it. I finally decided to try it for an experiment. I made a cut 18 or 20 inches from the ground, cut the tip of sucker slanting, inserted it and treated otherwise like a bud. I did not expect good results, as I thought from the sickly appearance of the tops that the sap was in no condition for callousing. I was mistaken, however. When I untied I found sucker and tree top firmly united. So I went to work and budded all the trees in this way which had suckers. All the trees I fixed in this way some six months ago look bright and thrifty now, although the suckers I used were only about the size of a carpenter's pencil. The foliage is much darker and the trees full of young shoots and buds. One tree in particular astonished me. This was girdled clear around, and the bark at least 4 inches apart in the narrowest place and had been in that shape for at least six months. I found two suckers on that, put one of them into the tree trunk and the other into a heavy limb. The tree has rapidly improved in color of foliage, and the limb into which the sucker was united is darker even than the rest of the tree. I have never heard of anyone trying this way of saving a tree before, and I do not know if my experiment will be of any practical value to anyone. I suppose in another six or twelve months I shall know more about it than I do now. I should like very much to hear what you think of this; also if you know of anyone else trying this or a similar method. If interesting to you I will inform you later on of progress in condition of trees.

GEO. H. MOEBIUS.

Fairview Ranch, Lakeside, San Diego county.

[This method is old, but the application is perhaps new. To save fruit trees girdled by mice under the snow at the East, or otherwise injured around the

base, pliant shoots have been "budded in" above and below with perfect success. This is an old practise. The use of a sucker below is similar to that, but this application of the principle is interesting.—Ed.]

Twice Plowing Urged.

TO THE EDITOR:—In my letter which you published with comments in the PACIFIC RURAL PRESS of Dec. 23rd, I simply wished to suggest or encourage you to advocate, through the columns of your paper, the necessity of twice plowing. Not one man in twenty in this vicinity or any other locality who is engaged in grape growing, where I have visited, plows more than once.

Old farmers laughed at me for my deep cultivation and repeated plowing during 1898 and 1899. I cross-plowed, too, and was censured for cutting off lateral roots, etc.; but results have proven I was all right. From Tokays this year I had 200 crates per acre and two tons for the winery besides, and right across the valley and all around me the crop was comparatively light. Others who condemned my practises had tumble weeds to no end, while my land was clean. Now I hope you will start them in the right direction and keep at them, for your influence will avail much.

As to your remarks on my letter, I have this to say: When in plowing toward the trees on level ground, the first two furrows thrown toward each other raise the soil from four to six inches, and then when later thrown back the roots are never uncovered. If plowed from the vine first, it sometimes happens that a dry norther sets in before the second plowing is finished; and, if so, in spite of capillary attraction or any amount of cultivation, the center coming will not be as moist and mellow as by the other method.

In spite of "the demonstrations of the evil of late plowing away from the trees," which you have seen, I am positive that roots will receive no injury if plowed to and from. I have lived long enough in Canada and dabbled sufficiently in orchard work, also in raspberry, currant and gooseberry culture to have noticed that a plant well earthed up will resist the advances of the sun more than one whose roots are comparatively exposed.

FRED H. LEE.

Lodi, Cal.

THE VETERINARIAN.

Answers by Dr. Creely.

SICK HOGS.

TO THE EDITOR:—Will you please tell me through the columns of the PRESS what the matter is with hogs that cough and also, after lying down a while, when attempting to walk, stagger behind? I would be glad to have you suggest a remedy.—A READER, Saratoga.

Give an emetic. Separate from the healthy ones and thoroughly disinfect the pig pens. Destroy excrement and give the following powder: Sulphur, 4 oz.; powdered charcoal, 4 oz.; nitrate of potash, 2 oz.; chlorate of potash, 3 oz.; flaxseed meal, 16 oz.; citrate of iron, $\frac{1}{2}$ lb. Mix and give a tablespoon three times daily.

TREATMENT FOR UDDER TROUBLE.

TO THE EDITOR:—I have a valuable Jersey cow, recently purchased, who, with others, has had an attack of cow-pox. All have recovered but her. Her health and appetite are fairly good, but the right side of her udder yields nothing but dirty, thick, reddish water, with a few clots streaked with blood, the stench being very offensive. The milk from the other side of her udder is all right, but much less in quantity than before. She has a slight cough. I shall be glad if your estimable veterinary can give me any light on the matter.—A. R. GERR, Merced.

Apply externally, sulpho-iodide ointment. Inject two times daily two teaspoons of peroxide of hydrogen, closing the opening so the hydrogen will remain in the teat for several minutes. Use a tablespoon of chlorate of potash daily in a warm mash for the cough.

TO KILL LICE ON A HORSE.

TO THE EDITOR:—Kindly inform me if there is any thing I can give a horse to make the hair grow again, which has come out by the ravages of chicken lice.—CAMPBELL.

To kill lice and grow hair use coal oil, 1 oz.; creoline, 1 oz.; oil of cade, 4 oz.; oil eucalyptus, $\frac{1}{2}$ oz.; olive oil, 8 oz. Mix and apply once daily. DR. E. J. CREELY.

510 Golden Gate Ave., S. F., Cal.

[Dr. Creely has been in Oregon for some days buying cavalry horses for the Government. He reports horses exceedingly scarce and apparently worth as much as they were ten years ago. His absence has delayed answers to correspondents.—Ed.]

Agricultural Review.

ALAMEDA.

PLOWING AND PLANTING.—Niles Herald, Jan. 19: The work of plowing is now generally under way in this township, although the ground is yet quite wet in many places, some seeding has been done.

BURNED THE TREES.—The report of Horticultural Commissioner Wm. Barry calls attention to finding "peach-root borer" in nursery stock imported from the Eastern States. The report states that there "arrived last week several thousand trees from the States of Kansas, Ohio and Iowa. The Ohio stock was all small plants and berries, and were disinfected by dipping roots and tops in whalool soap. Those from Iowa and Kansas consisted of peach and apricot trees on peach roots, and were found to be badly infested with the 'peach-root borer.' After I had quarantined them the consignee had them all burned, which proved the best way to disinfect them."

BUTTE.

INCOME FROM BEES.—Biggs Argus: Fred Hasselbusch does not depend on his wheat crop to meet expenses. He devotes his spare time to bees and has about seventy hives. During the last two weeks he shipped 160 pounds of beeswax for which he received \$40, outside of a weekly income from honey which he sells in five-pound boxes in the comb at 50 cents per box, besides a considerable amount of strained honey. He realizes about \$300 a year from his bees, which take but little of his time and obtain their own living.

ORANGES ON ADOBE.—Biggs Argus, Jan. 19: Mosos LaPoint has a cluster of three navel oranges that weigh 32½ ounces. Another orange from the same tree weighs one pound and measures 13 inches in circumference; while another weighs 14½ ounces and is 12½ inches in circumference. Those oranges were selected from others now growing on a tree planted seven years ago on adobe soil. For color, size and quantity they cannot be beat. [There are several kinds of adobe soil in the State and usually what is called adobe in the citrus regions is a good clay loam and not the hateful, sticky adobe of other parts of the State. The orange rejoices in rather a heavy soil providing moisture conditions are properly regulated.—ED.]

FRESNO.

LAST PAYMENT ON RAISINS.—Fresno, Jan. 16: The raisin packers to-day made their settlement with the directors of the California Raisin Growers' Association, paying in \$150,000 as the last payment on raisins. This money will be immediately distributed to the growers, and will close the season's business.

GRAIN ACREAGE.—Sanger Herald, Jan. 20: Farmers on the adobe lands north and east of town inform us that not more than two-thirds as much grain has been sown this winter as there was a year ago, owing to the heavy condition of the soil. The ground has run together to such an extent that it must be plowed again ere grain can be sown. Jos. Weil, the local grain dealer, estimates that the acreage of grain in this part of the county will be one-fifth less than last year.

KERN.

WOOL IS CLEAN.—Bakersfield Echo, Jan. 18: Sheep men say frequent rains and abundance of grass tend to keep the wool much cleaner than in other years, and it will command a much better price in consequence. At this time last year sheep were eking out scanty sustenance from what vegetation was to be found on the dry, burnt plains; and storms were of frequent occurrence; when the sheep laid down to rest it was on the dusty ground, and their coats of wool grew heavy with dirt, while no rains came to cleanse them.

KINGS.

DIRECTORS ELECTED.—Hanford Sentinel, Jan. 18: At the meeting of the Union Ditch Co. directors were elected for the ensuing year as follows: O. T. Gris-

wold, A. P. Keran, W. T. Burnett, C. E. Lako and C. Curry.

LOS ANGELES.

OFFICERS ELECTED.—Covina Argus, Jan. 13: At the annual meeting of the Covina Water Co. the following directors and officers were elected: B. F. Edwards, president; J. H. Coolman, vice-president; J. M. Holt, secretary and superintendent; C. E. Bemis, E. A. Hoffman and C. H. McClure. At the annual meeting of the stockholders of the Covina Irrigating Co. the following were elected directors: A. P. Kerckhoff, H. E. Chesebro, B. F. Edwards, C. H. Ruddle, J. H. Adams, J. R. Elliott, S. P. Jennison, W. G. Hall and L. J. C. Spruance. The directors elected H. E. Chesebro president; S. P. Jennison vice-president; F. D. McCord secretary; Covina Valley Bank treasurer; J. R. Elliott superintendent; E. W. Worrel, janitor. A resolution was introduced fixing the price for service of stock water, when running on schedule, at \$6 per 100 inches for twelve hours.

MONTEREY.

BEEF SLICING.—Watsonville Pajaronian, Jan. 11: The Spreckels mill sliced 23,000 tons of beets during its Christmas week run. It is waiting now for the balance of the crop, which is estimated at from 15,000 tons upward.

WILL MAKE CHEESE.—Gonzales Tribune: The Gonzales Creamery, owned by Messrs. Travernetti, Marcettie and Ramelli, will cease making butter for the San Francisco market. They have received during the week a complete outfit for making cheese.

CATTLE FROM ARIZONA.—Salinas Index: A special train of seventeen cars brought 613 head of yearlings and two-year-old short horn beef cattle from Pantano and Tucson, Ariz., consigned to Josse D. Carr.

ORANGE.

FARMERS' INSURANCE COMPANY.—Santa Ana Blade, Jan. 12: At the second annual meeting of the Orange County Farmers' Mutual Fire Insurance Co. the report of the secretary, F. D. Reed, showed the condition of the company to be as follows: Whole number of policies issued, 356; number of policies written in 1899, 154; amount of insurance written in original policies, \$280,518; amount of insurance written in 1899, \$120,710; amount of insurance added to original policies in 1899, \$5930; total insurance written in 1899, \$126,640; amount cancelled in 1899, \$6675; net increase, \$119,965; amount in force Dec. 31, 1899, \$150,675; amount in force Dec. 31, 1899, \$270,640; amount received for premiums and transfers during 1899, \$262,30; expenses, \$157.22; total resources, \$373.29; liabilities, \$43.95; net resources, \$311.34.

SAN BERNARDINO.

BEEF FARMING.—Chino Champion, Jan. 19: Preparations are being made for planting the beet crop of 1900. This week a carload of seed was shipped to Anaheim, where planting will commence in a few days. The American Beet Sugar Co. will farm about 700 acres. Robert Oxnard is looking after the matter of retaining fertilizers produced on the land. Not only will the company insert a clause in its leases that all the manure produced on the land leased must be spread on the same land, but it will purchase manure from others than its lessees.

SAN JOAQUIN.

MUST SPRAY.—Stockton Mail, Jan. 16: Notices are being mailed by Fruit Inspector White to orchardists and vineyardists throughout the county in line with the following resolution recently adopted by the Horticultural Board: "Resolved, That it is for the best interest of orchardists and the community at large, and for the better protection of the fruit industry of the county, that this commission adopt a circular to be sent to all fruit growers of the county, warning them and requesting of them to take more interest in protecting their own orchards, and spraying for the destruction of pests throughout the county, and that it will be necessary for the Board of Horticultural Commissioners in the future to be more strict and more careful to see that the law is properly carried out; and the secretary is ordered to prepare a notice and have printed two thousand copies for circulation throughout the county."

WILLOW TREES TO PREVENT WASH.—A novel plan has been adopted by the Santa Fe Railway to protect its embankment in the swamp land from wash in times of high water. For sixteen miles willow trees are to be planted on each side of the road-bed, to form a mat of foliage and limbs. People who have not seen the effect of a gale on a sea of shallow water cannot realize the force with which the waves beat against embankments. How to protect levees from wash without going

to too much expense has long been a problem with the owners of reclaimed land, and the Santa Fe's experiment will be watched with interest. The contract for the work has been let to Cy Moreing. Willow cuttings are to be set out. They will be about 1½ feet long, and will be thrust half their length into the soil. There will be two rows of twigs on each side about 1½ feet apart. The cuttings, which are to be about 2 feet apart in the row, will be so set that the twig in one row will be half way between the two in the other. Looking from one side the cuttings will appear to be planted but 1 foot apart, and when the trees grow the trunks will form an almost solid fence. Contractor Moreing will plant cuttings from the yellow willow. Tall trees would be objectionable, by interfering with traffic on the road. What is desired is a low-growing tree of thick habit, and the yellow willow fills the requirements. Along each side of the embankment there is a canal, which was dug to get material for the road bed, and consequently there will be water enough at all seasons of the year to keep the trees alive.

LEVEE NEARLY FINISHED.—Stockton Mail, Jan. 10: Cy Moreing & Son have nearly finished their contract for building a levee around the McLaughlin tract, comprising 4600 acres near Banta. There is still about a week's work for a dredger, which will put the finishing touches on the large levee, which is believed to be strong enough to protect the tract against any possible floods. The land is covered with a thick growth of grass, and, as the soil has never been broken, the work of plowing it requires large teams. Moreing & Son have leased 2000 acres and are now plowing with twelve teams of ten or twelve animals each. Stein & Meyers have leased 1100 acres and McCormick Bros. control 1000 acres. D. Linney will cultivate the remaining 500 acres. As much of the land as can be made ready in time will be sowed to wheat and the rest to barley.

SAN LUIS OBISPO.

EXPERIENCE WITH GRAIN.—San Luis Obispo Tribune, Jan. 19: In a paper read before the Farmers' Institute at Paso Robles, R. M. Shackelford said: No farmer should seed more than one-half the land he farms in any one year. One man with an eight-horse team, with present farming utensils, can farm 400 or 500 acres of land without hiring any help until the time comes to harvest. If half of the land is summer-fallowed, and the other half seeded, the seed can be rushed in as early as is safe, leaving the winter and spring for plowing for the summer-fallow. In April or May the summer-fallowed land should be cross-plowed, to kill the foul stuff, and the land left as rough as possible, to give the sun and air a chance to slack the soil. When seed time comes, the best and plumpest seed should be procured, from near the coast, if possible. Sixty pounds at least to the acre should be sowed, and if the seed comes well and appears too thick, it can be thinned with a sharp tooth harrow before it begins to joint."

SANTA BARBARA.

PLOWING WITH STEAM.—Santa Barbara Press, Jan. 18: Farmers at Santa Maria are at their busiest plowing for grain or for summer crops. At the sugar company's farm vast rotating disk plows of 16-inch swath cut into the refractory soil for a depth of 12 to 15 inches, six horses to each plow. Two plows of six gangs each, driven by a steam traction engine, are working night and day, even when the soil is dry. The factory now farms

One of the Finest Catalogues Ever Published.

One of the most valuable seed catalogues ever issued from any house in the United States is just now being distributed among the friends and patrons of the great seed house of the Cox Seed Company of 411-413-415 Sansome street of this city. These people are among the largest growers and handlers of the best seeds and plants in the West, and growers on the coast are giving them the preference in orders over the Eastern seedsmen. A copy of the new catalogue will be mailed free to any address on receipt of request, addressed to the company's headquarters in San Francisco.

WANTED.

A single young man who is a competent budder and grafter and understands general nursery work. Give references.

Address GEO. C. ROEDING, Fancher Creek Nursery, Fresno, Cal.

I HAVE TO OFFER LOGANBERRIES.

Rooted tips and transplanted 1-year old vines by the 100 or 1000, EXTRA fine. Also Peaches, dormant bud, in variety, including Muir and Orange Cling, by the 100 or 1000. Address R. P. EACHUS, Lakeport, Lake Co., Cal.

2500 acres for beets, and plowing is done once a year very deep. The area in grain will be nearly the same as last year, but more beets will be planted and a little less barley. An increase in bean lands is expected. Grass and grain are growing nicely at present, though the total seasonal rainfall is only 5 inches.

SANTA CLARA.

GROWERS ENTHUSIASTIC.—San Jose Mercury, Jan. 21: The orchardists at Campbell are very much elated over the organization of the California Fruit Association. Mr. Tibbits, manager of the drier, who is in a position to learn the sentiments of the fruit men of this district, informs your correspondent that a great deal of enthusiasm is manifest over the success so far attained, and that the growers nearly to a man will give the association their hearty support.

SOLANO.

FRUIT SHIPMENTS.—Vacaville Reporter, Jan. 13: Through the kindness of S. F. Ellison, the representative of the Southern Pacific at Vacaville, we learn that 687 carloads of green fruit went East from Vacaville during the year 1899, while in 1898 only 328 were sent. The dried fruit shipments for 1899 were sixty-three carloads. On account of the apricot crop being so largely a failure, the shipments of dried fruit in 1898 surpassed those of 1899 by seven carloads. During 1898 thirty-two carloads of green fruit were shipped to San Francisco. This season goes a little higher with forty-one carloads. The aggregate of carloads shipped from Vacaville during the year 1899 is 793.

SONOMA.

CITRUS FAIR.—Cloverdale Reveille, Jan. 13: At the meeting of the directors of the Citrus Fair, President Caldwell announced the following committees in addition to those already appointed: Programme and Entertainment—W. D. Sink, T. B. Wilson, C. B. Shaw, Thos. Mitchell and R. S. Markell. Regulations and Rewards—W. T. Brush, E. G. Furber, G. Hagmayer, F. Yordi and G. B. Baer. Soliciting—Wm. Caldwell and W. D. Sink. Finance—V. D. Sink and G. Cameron.

Strong Bones

In speaking about Scott's Emulsion for children, you should not forget that it contains **lime** and **soda**, just what the child must have to form strong bones and good teeth. It's this forming time you want to look after.

Growing bodies must have an easily digested fat. Just think how much of it there is in milk, as cream.

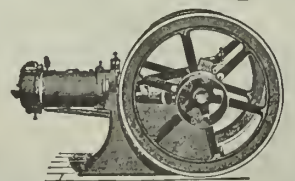
Scott's Emulsion

is even more easily digested than cream. It's surprising how children thrive when given it.

Don't keep the children living on the edge of sickness all the time. Make them strong and rugged, plump and hearty. Scott's Emulsion of Cod-liver Oil and the Hypophosphites of Lime and Soda will do this for them.

At all druggists; 50c. and \$1.00. SCOTT & BOWNE, Chemists, New York.

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PIERCE GASOLINE ENGINES

Can be used with Gasoline, Coal Gas or Natural Gas. ALL SIZES.

Send for Catalogue and Prices.

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The McCormick
"The Best in the World"

Horse Owners! Use
GOMBAULT'S
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A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blisters from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or bluish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

The New Year.

O Glad New Year, the whole wide world
Reaches welcoming hands to thee.
We yearn to fathom what will betide
In life's sad, surging sea.
We long to know, ere we plant the seed,
What the harvest of hope will be!

Be kind to our soldiers on foreign field,
Who liberty and life will yield
To save their nation's name;
Be kind to the sorrowing hearts at home,
And back to their arms let their heroes
Come,
Unscathed by shot or shame.

We hope to be happy with thee, New Year.
We mean to do better, and pray thee hear
And help us to keep our vow.
We intend to bear our honest share
In all the world needs now.
We intend to give, if we cannot spend;
We intend to serve, if we cannot lend.
God keep us faithful to the end
Of this happy, bright New Year.

—Retta Long.

The Sweetness of Forgiving.

And if the husband or the wife
In home's strong light discovers
Such slight defaults as failed to meet
The blinded eyes of lovers,

Why need we care to ask? Who dream
Without their thorn of roses?
Or wonder that the truest steel
The readiest spark discloses?

For still in mutual sufferance lies
The secret of true living;
Love scarce is love that never knows
The sweetness of forgiving.

—John G. Whittier.

A Search That Was Rewarded.

A few years ago I resided near St. Cloud, one of the picturesque, interesting environs of Paris, and had as a neighbor an old dealer in tapestry, who had retired.

The man was named Victor Lamotte, and if all the inhabitants of this world were as sterling in character and straightforward in their affairs life would be more pleasant and peaceful, but envious people were not lacking to say unkind things. They said that his fortune was the result of a lucky find in an old writing desk which he bought for a few francs, and that in examining his purchase he came across a secret drawer containing 100,000 francs in bank notes.

This story was repeated on all sides, and was finally accepted as truth by even those who entertained the kindest feelings for Mr. Lamotte.

I did not believe this pretty little story—I could not tell exactly why—but Mr. Lamotte gave me the idea that he had acquired his modest fortune by industry, thrift and energy of character.

One evening (it was the old gentleman's birthday), the subject of luck came up and I ventured to remark that I was not a profound believer in luck of any kind, but had a high opinion of talent, work and of always embracing favorable opportunities when they presented themselves.

"You are quite right," concurred the old tapestry merchant. "I am decidedly of your opinion—work and opportunity."

"Then you do not owe any portion of your fortune to mere luck?" I remarked inquiringly.

"Not in the least. I suppose, like everybody else, you have heard the story of the miser's writing desk and the fortune concealed therein?"

It was a delicate, personal question, but I at once replied:

"Yes, many times."

"Well, it's sheer invention. Who started it I have never been able to discover."

"Well, dear Mr. Lamotte," I said, "I did not swallow the escroiteiro legend by any means. Old misers and writing desks containing 100,000 francs are attractive features in tales but rarely happen in real life."

"And yet I may say I once enjoyed

a piece of excellent good fortune in quite another way," remarked my friend, "and an account of it may interest you. Would you like to hear it?"

"Most decidedly." I saw the old dealer was in the mood for talking and I was equally in the mood for listening.

"Well, to begin, I was one day at work in the shop of a dealer in second-hand furniture, polishing a cabinet of buhl, when there entered a lady. Her dress proclaimed her a person of fashion, possibly of rank. Her carriage and servants in livery expressed also the rich, quiet taste that is usually obtained by the long possession of wealth and cultivation.

"Monsieur," she said to the dealer, "have you among your stock of old stuffs a fabric like this sample?"

"The dealer took the fabric from the lady's hand, examined it carefully and at last said in an admiring tone:

"This is the most beautiful velvet brocade that has ever fallen under my observation. I have never met anything at all resembling it. I possess some exquisite brocades, but not one equal to this. Indeed, madam, I should say that you alone are the possessor of this superb stuff."

"But why, monsieur? I doubt if there was only enough of this brocade made for my great-grandfather, from whom it came to us, and, if we have so carefully preserved it, why should not some other family have done the same? I require twenty-five yards. If you will procure it for me I will pay you 500 francs a yard, or even more if the expense attending the search makes it necessary."

"Then the lady told Mr. Lemoine that he would understand how important the matter was if she went into some details. She said that she was the Marquise de Rayenne de Cluny and that she possessed a chamber called 'the brown room,' which was entirely appointed in brocaded tissue like that which he held in his hand; the window curtains and convertures, armchairs, the priedieu, all of this exquisite fabric. Louis XV., Charles X., and many princes of foreign royal families, nuncios of the pope, cardinals, marshals—all had slept in this brown chamber. It was the pride of her husband and herself to preserve the aspect of this room for her descendants as they had received it from their ancestors. A recent fire had taken place at the chateau and the flames had burst through one of the windows and utterly destroyed the curtains. To repair the damage it would require twenty-five yards of material.

"I regret extremely to disappoint you, madam," said Mr. Lemoine, "but it would be holding out false hopes to say I could obtain it for you. I have never met with a fabric like it, and to get the identical thing will, I fear, be impossible. Besides, I believe it was unique. I can give you stuffs very like it in design and color in a tissue of our own period."

"An imitation you mean, monsieur? That would not do at all."

"Very well, madam la marquise, I will take your order and institute a search, but I do not hold out any great hopes of success."

"In an obscure corner of the shop I was still working away on the buhl cabinet, and I overheard all that had been said. I was greatly interested and would have liked nothing better than to have seen and felt that lovely fabric, incomparable and so precious, but I was only nineteen, naturally retiring, and there was nothing in either my position in life or my manners to commend me to a fine lady or to put one forward in my way.

"All at once Mr. Lemoine interrupted my busy thoughts.

"Lamotte, come here, if you please."

"I left the cabinet and approached him. The dealer met me half way, holding out the beautiful brocade.

"Isn't this lovely stuff?"

"It is indeed lovely," I replied, "as beautiful as if woven by the blessed lady from silk spun at her own wheel, and marvelous, too. I am inclined to think, monsieur, as does madam la marquise, that it might be found in some old chateau or some place in the

provinces, where the family might part with it if it were made worth their while."

"If you think so," said the dealer, "why not undertake this commission yourself?"

"I replied that my work confined me to my shop and that I had no leisure except on Sundays to make the search."

"Monsieur," said the marquise turning to me, "what sum do you earn a day?"

"Five francs, madam la marquise."

"Eh bien! I will undertake to give you five francs a day, and instead of working in the shop you can traverse Paris in search of the brown brocaded velvet. It is also understood that if any trips outside of Paris are necessary I will pay the expense."

"Then she added smiling: 'But we must put a limit to this piece of extravagance, and say that if after six months' search you have not found the tissue, we must admit with Mr. Lemoine that my brocade is unique and it exists nowhere out of the Chateau de Rayonne.'

"The marquise gave me the sample, saying that she would not accept anything imitating it, but only the identical fabric woven at the same loom. She added that if I found the fabric I must at once send a sample to her chateau in Normandy, or still better bring it myself."

"You may imagine I lost no time in carrying the news to mother. I was to be paid for the by no means disagreeable task of walking through the shops of Paris in search of the brown velvet brocade; to interview brokers and dealers and ransack pawnshops and inspect peddlers' wares and hunt up old families who might have this fabric."

"I went to every old house in the Faubourg St. Germain to which I could gain access; also to every old chateau in the Seine. I went to every private sale and every public auction. In fact, I taxed my conscience day by day that I should leave no means untried by which I could search for the brown brocaded velvet and honestly earn my five francs a day."

"While I was diligently prosecuting my search two odd things happened. About two months after I had accepted my mission I thought I had the article. There was to be a sale of furniture at an old chateau near Pontoise, and there I saw a roll of brown brocaded velvet, as I thought, identically of the same pattern and weave. I could not restrain a cry of joy and surprise, but, alas! it was not quite the same. Two small details in the design differed, and the lighter tint of the brown was more accentuated. I was on the point of writing about it to madame la marquise, but I hesitated, for I remembered she protested that nothing but the identical thing—absolutely the same brocade—would be accepted. And I reasoned if I could not be successful, I could at least be obedient."

"The second incident was really startling. At the end of the fourth month I got to be so well known—and so had my sample of brocade—that all the second-hand shopkeepers began to laugh at me as a sort of crank and call me 'Old Mr. Brown.'

"Here comes old Brown Brocade," they would say whenever they saw me.

"But I did not heed their bandinage. On the contrary, it rather spurred me on to greater assiduity. If by their noisy mockery they would make others aware that someone was searching for a web of old brocade, there was all the more hope of the news reaching the family who might be in possession of the thing I wanted, and their railery would act as a sort of free advertisement."

"As I thought it would, the news got about that a man was searching for a particular pattern of old brown brocaded velvet, and offers came to me from a surprising number of places."

"One day, on reaching home quite weary and footsore, after a long day's search, I found a gentleman waiting for me, who said:

"Is it true, monsieur, that you are searching for twenty-five yards of old brown brocaded velvet?"

"It is quite true, monsieur."

"And that you will pay any price for it?"

"I will pay a fair price for it, monsieur, but not an extortionate one."

"Will you show me your stuff?"

"Certainly."

"After examining it he said to me: 'I am a manufacturer of similar goods, and I will undertake to make you that identical brocade for 1000 francs a yard. Be discreet and they will never know the difference, for I can make it look as ancient as the sample by a process of my own invention. The Rayonne de Clunys are wealthy. They care absolutely nothing if they fancy it. Why not get the material from me and end your fatiguing quest? I guarantee that it will be of the best material and a perfect copy, and you can deduct as commission 200 francs on the yard.'

"No, monsieur."

"And why not?"

"Because what I seek is an authentic ancient brocade, and a copy of this century will not do."

"I guarantee to produce the fabric so exactly that no one, not even an expert, could tell the difference. The Rayonne de Cluny family will have perfect faith in its genuineness. If you do not close with my offer you may as well retire from the search and save the wear and tear of your boots, for I tell you that you will never find it. All the dealers have already told you the same story."

"Then why do you come to me so confidently, saying that you can furnish the exact thing if I will let you manufacture it for me?"

"Because I can make it exactly like your pattern, and I thought you would gladly treat with me and pay 1000 francs per yard."

"Ah, well, we are wasting each other's time. Let us end this conference, monsieur."

"I'll make you a more liberal proposition. I'll give you 300 francs commission a yard."

"If you gave me 3000 francs a yard, monsieur, I should decline it, and have nothing more to say."

"The tempter withdrew."

"My order as to length of time had nearly expired. Almost at the last day, when I had given up hope, and merely to acquit myself of a stern duty and have nothing with which to reproach my conscience, I chanced upon a sale where there was a tremendous show of ancient, curious furniture and fabrics of many degrees of value. Among them I saw a large roll of brown stuff, and went closer to it with my sample, as usual, in my hand. I looked at it a long time, but only to find more perfect points of resemblance, until at last it was impossible to believe it was not the identical fabric I sought. The broker put it up at 20 francs a yard and I was outbid to 40 francs, at which price it was knocked down to me. The same day I took my sample and my precious burden to the chateau de la Rayonne, where the marquis and his wife received me as if I were a veritable worker of miracles. Their kindness was even warmer when, accompanying me to the famous brown chamber, I placed the open roll by the side of the velvet hangings of that room."

"It was a perfect match."

"They were so pleased that I believe had I charged them several hundred francs a yard they would have willingly paid it."

"I asked them only 40 francs, exactly what I had paid. They seemed satisfied, but made me no offer of a reward for my success."

"I should be departing from the truth if I did not confess that this bitterly disappointed me. I had thought from the manner of madam la marquise that she would have presented me with a few hundred francs after my desperate, persistent hunt, though it is true she had paid me what she agreed for my labor. But equally, I knew that any one of the men with whom her business had brought me in contact would have charged her quite 500 francs a yard for the ancient fabric. However, the interesting incident had happily ended, and I went back to my old work."

"About three months after this occurrence I received a summons from

the Marquis de la Rayonne de Cluny, desiring me to call upon him. I went without delay.

"My friend," said the nobleman, after some preliminary conversation, "what think you if I advance the capital to start you in business?"

"I should be deeply grateful, monsieur le marquis."

"Within ten days the marquis arranged for me to draw upon him for 50,000 francs at long credit, with not a sou of interest to pay."

"And now, my friend, you have heard my story. It is true that fortune helped me, as the gossips say, but I owed that fortune to industry and fidelity, which gave me the patronage of the man who started me, as it were, in life, and but for whom I should still most probably be an ordinary workman, instead of a retired merchant."

"I may add, in conclusion, that I was enabled within ten years to pay my kind benefactor the 50,000 francs he so generously advanced, and during that period he gave me many commissions that yielded handsome profits. I was then a free man. Is not that infinitely better than accidentally finding a fortune in a miser's old writing desk?"

How to Economize, yet Have Dainty Appointments.

Written for the PACIFIC RURAL PRESS by KENTUCKIENNE.

Every fastidious woman loves to have dainty cambric handkerchiefs; but one who has only a little spending money, and has to consider ways and means, can not afford to give her pretty cambric handkerchiefs to a careless laundress. Many young ladies who have a liberal allowance of pin money are making and laundering their own handkerchiefs in preference to giving them out to one who may bring them back with the lace all off and small holes in them. It is worth the while of those who wish to economize to study the art of laundering their own, and they can save considerable both in the goods and material (if they make them themselves) and in the prices they charge for doing them up. There was never a more perfect way of doing up handkerchiefs than the present mode of putting them on a mirror or marble slab instead of ironing them. Fill a bowl with warm rainwater and put in enough pearlina to make cleansing suds; then put in a half dozen of your nicest handkerchiefs, and wash them gently with your hands. Rinse in several waters and, lastly, put in a little blueing—very little—and, while wet, place one at a time on a window pane or marble slab and smooth them perfectly, pulling every bit of lace out, and leave them there to dry. When thoroughly dry, peel off and fold and put away in a perfumed box, and you will have the sheerest, prettiest handkerchiefs you ever saw. Of course, they must not be much soiled when washed, for your most handsome cambric ones should never be allowed to become much soiled. This is an art, especially adapted to the dainty, fastidious lady. They surpass by far the ones ironed, and it will save you money in a little while to adopt this plan. It is easy work, and it is wonderful how much longer they last.

Care of Silver Ware.

Do not wrap silver or plated ware not in use in a flannel. It contains sulphur, which is likely to tarnish it. Wrap in blue tissue paper, then in unbleached cotton flannel and inclose in heavy wrapping paper to exclude the air as much as possible. To polish silver that has become badly tarnished moisten a soft cloth in sweet oil, then with any tested polishing powder rub the silver until the spots have disappeared. Then rub with chamois skin and powder, and finish polishing with the clean piece of chamois.

As THEY bent solicitously over him, the man who had been kicked by a horse opened his eyes. "Have you any last wish?" they asked him.

"Yes," he replied. "Have an automobile hearse at the funeral."

Boys Who Succeed.

Thirty years ago Mr. Hoyle, a nurseryman in New York State, left home for a day or two. It was rainy weather, and not a season for sales; but a customer arrived from a distance, hitched his horse, and went into the kitchen of a farmhouse, where two lads were cracking nuts.

"Is Mr. Hoyle at home?"

"No, sir," said the eldest, Joe, hammering at a nut.

"When will he be back?"

"Dunno, sir; maybe not for a week."

The other boy, Jim, jumped up and followed the man out.

"The men are not here, but I can show you the stock," said he, with such a bright, courteous manner that the stranger, who was a little irritated, stopped and followed him through the nursery, examining the trees, and left his order.

"You have sold the largest bill that I have had this season, Jim," his father said to him, greatly pleased, on his return home.

"I'm sure," said Joe. "I'm as willing to help as Jim, if I'd thought in time."

A few years afterward these two boys were left, by the father's failure and death, with \$300 each. Joe, bought an acre near home. He has worked hard, but is still a poor, discontented man.

Jim bought an emigrant's ticket to California, hired as a cattle driver and with his wagon he bought land at 40 cents an acre, built himself a house, and married. His herds of cattle were numbered by the thousand. The land he bought he cut up for town lots, and he is ranked as one of wealthiest men of the State.

"I might have done like Jim," said his brother, lately, "if I'd thought in time. There's as good stuff in me as in him."

"There's as good stuff in this loaf of bread as in any I ever made," said his wife, "but nobody can eat it; there's not enough yeast in it."

The retort, though disagreeable, was applicable. The quick, wide-awake energy which acts as leaven in a character is partly natural. But it can be inculcated by parents, and acquired by a boy if he chooses to keep his eyes open and act promptly and boldly in every emergency.

Avoid Unkind Speeches.

Isn't there some times in your life when everything seems to go wrong, no matter how hard you try to have them go right? Those are the trying days when you want to blame all of the trouble on the way you got out of bed in the morning or on other people, instead of looking the matter squarely in the face, and saying, "It's one of my exasperating days, and if I can only keep my temper until night comes tomorrow will be different."

Words may be forgiven, but they are not so easily forgotten. The unkind speech that is forced from you because you are not feeling quite well, or the pettish, annoying little action that you indulge in simply because you are nervous or worried doesn't do you one bit of good and makes everybody around you uncomfortable, and long after the words have been uttered or the deed done, the memory will rankle and burn and you will wish that you had held on to your tongue and your temper before you got into such a scrape. Remember this the next time that you feel put out by the world in general.

The Twenty Best Books

"The twenty best books in the world," according to a consensus of replies recently published in London Truth, are as follows: The Bible, Shakespeare, Homer, "Paradise Lost," "Vanity Fair," Dante, "The Pilgrim's Progress," Gibbon's "Decline and Fall," "Ivanhoe," "Robinson Crusoe," Carlyle's "French Revolution," "The Imitation of Christ," Boswell's Johnson, "Pickwick," Tennyson, "The Arabian Nights," Virgil, Moliere, "David Copperfield" and "The Vicar of Wake-

field." In this selection the books are supposed to rank in the order named.

DOMESTIC ECONOMY.

Tested Recipes.

Compiled for the PACIFIC RURAL PRESS by ANNIE BRANDT.

Beefsteak is excellent prepared by the following recipe, which my father brought from Denmark, and which we call "Danish Beefsteak."

Two pounds tender steak, three good-sized onions, one-third cup butter, one tablespoon salt, one-quarter teaspoon pepper, one pint water. Cut the steak proper size to serve, dredge heavily with flour, and place a layer in a flat-bottomed stewpan, in which a little butter has previously been melted; slice upon it a layer of onions, season with pepper, salt and butter. Arrange another layer of meat and onions, and season, and so on until all the ingredients are used; then pour over the pint of water (which should be hot); cover first with a cloth, then with a close cover, and place on the stove where it will cook slowly for one and one-half hours.

SPONGE CAKE.—Five eggs, two cups sugar, two and one-half cups flour, three-fourths cup water, a pinch of salt, one teaspoon vanilla, two teaspoons extract of lemon. Separate the whites of two of the eggs, and set aside for frosting; beat the yolks, and the three whole eggs, with the sugar, adding the sugar gradually; beat five minutes; sift in the flour, with the salt, and a teaspoonful of baking powder; stir together lightly, then add the water, a little at a time, and lastly, the flavoring. Put the batter in a buttered pan (or pans) to the depth of $\frac{1}{2}$ inch, and bake in a rather quick oven. Test with a broom straw—when the straw comes out with no batter adhering, the cake is done; turn it out on paper, and frost before it is quite cold. To make the frosting, boil one and one-half cups sugar until it will form a soft ball when dropped in water, then pour it slowly over the beaten whites of two eggs, beating all the time, until it is of the right consistency to spread on the cake. A little experience will teach one how to make and use boiled icing, and experience alone can do so.

LEMON PIE.—One lemon, one-half cup sugar, two eggs, one level tablespoon cornstarch, one-half cup water, one-half cup cream, one cracker rolled fine. Separate the whites of the eggs, and set aside; stir the sugar gradually into the yolks, grate in a little of the rind of the lemon, and squeeze in the juice; add the rolled cracker and a pinch of salt; heat the water and cream to the boiling point, then stir in the cornstarch, previously dissolved in a little cold water; let it boil, then pour quickly over the other ingredients, and stir thoroughly together; pour the mixture into a pie tin which has been lined with a rich pastry, and place in a quick oven until the crust is nicely browned; remove from the oven and cover with the whites of the eggs, beaten very stiff and sweetened with a tablespoonful of sugar; return to the oven and brown. Serve cold.

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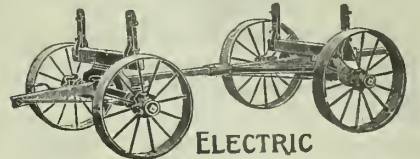
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Jan. 24, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	Jan.	May.
Wednesday.....	62 1/2 @ 62 3/4	65 1/4 @ 66
Thursday.....	61 1/4 @ 62 1/4	64 1/4 @ 65 1/4
Friday.....	62 1/4 @ 63 1/4	65 1/4 @ 66 1/4
Saturday.....	63 @ —	66 1/4 @ 67 1/4
Monday.....	63 3/4 @ —	67 1/4 @ 68 1/4
Tuesday.....	64 1/4 @ 64 3/4	68 1/4 @ 69

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday.....	5s 7 1/2 d	5s 7 1/2 d
Thursday.....	5s 7 1/2 d	5s 7 1/2 d
Friday.....	5s 7 1/2 d	5s 7 1/2 d
Saturday.....	5s 7 1/2 d	5s 7 1/2 d
Monday.....	5s 9 d	5s 8 1/2 d
Tuesday.....	5s 8 1/2 d	5s 8 1/2 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	98 @ 98 1/2	1 02 3/4 @ 1 03 1/4
Friday.....	99 @ 98 1/2	1 03 @ 1 02 3/4
Saturday.....	98 1/2 @ 99	1 03 @ —
Monday.....	1 00 @ 1 00 1/2	1 03 1/2 @ 1 04 1/2
Tuesday.....	1 00 1/2 @ 1 00 1/2	1 04 1/2 @ 1 04 1/2
Wednesday.....	1 01 1/4 @ 1 00 1/2	1 05 1/2 @ 1 04 1/2

WHEAT.

There is a little better tone to the wheat market, and it is to be hoped it will be followed by the development of further strength, but the situation locally cannot be termed encouraging. The exporting firms in this center work in unison, so there is virtually no competition. This in connection with the flour combine leaves the producer at the mercy of two trusts, neither of which is solicitous or at all concerned about the interests of the grower, further than from a selfish standpoint the affairs of the combines may be affected. The improvement the past week was mainly in the speculative market, bad weather for coming crop in Russia and France being given as the principal cause. Of the quantity of wheat afloat there is a reported decrease of 1,900,000 bushels, and in the total visible supply "Bradstreet" reports a decrease of 1,254,000 bushels. Chicago futures moved up 1 1/2 @ 2c per bushel, and Liverpool options advanced the equivalent of 1 1/4 @ 1 1/2c per cental. On the local Call Board there was an improvement of about 1 1/2c per cental. Asking rates in the spot market were advanced about 50c per ton, but there was no active inquiry, and buyers were not readily found at the advance. At Wednesday's noon session the speculative market opened higher, but closed fractionally lower than previous day.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 98c @ \$1.01 1/2.
December, 1900, delivery, 1.02 1/2 @ 1.05 1/2.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at \$1.01 1/4 @ 1.00 1/2; December, 1900, 1.05 1/2 @ 1.04 1/2.

California Milling.....	\$ 97 1/2 @ 1 02 1/4
Cal. No. 1 shipping, alongside.....	95 @ 97 1/2
Oregon Valley.....	90 @ 97 1/2
Walla Walla Blue Stem.....	90 @ 1 00
Walla Walla Club.....	80 @ 1 00
Off qualities wheat.....	75 @ 90

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	-s-d @ -s-d	6s2d @ 6s2 1/2d
Freight rates.....	25 @ 27s	35 @ 36 1/2s
Local market.....	\$1 12 1/4 @ 1 15	\$0 93 3/4 @ 96 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

In all essential respects the market shows the same condition as for several weeks past. Trade on local account continues of light volume, but the outward movement is considerably above the average. Shipments to Asia exceed those of any previous date. The steamer *Algoa* sailed Monday with 50,986 barrels. While the market is not particularly firm, values are being better sustained, as compared with wheat, than for a long time past.

Superfine, lower grades.....	\$2 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

A cargo of this cereal was cleared the

past week for Europe, the ship *Salvatore Ciampa* carrying 57,191 centals, the clearance valuation of the barley being \$1 per cental. Over 160,000 tons of this cereal have gone outward by sea thus far this season, and some shipments of wholesale proportions have been made overland to New Orleans, thence to Europe. Business on local account is not of heavy volume. Values remain practically in same position as quoted a week ago, but market cannot be termed firm.

Feed, No. 1 to choice.....	75 @ 77 1/2
Feed, fair to good.....	60 @ 72 1/2
Brewing, No. 1 to choice.....	87 1/2 @ 97 1/2
Chevalier, No. 1 to choice.....	1 00 @ 1 07 1/2
Chevalier, No. 2.....	— @ —

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

Seller, 1900, new, — @ —.
May, 1900, delivery, 70 @ —c.
December, 1900, delivery, — @ —e.

Wednesday, at regular noon session of the Call Board, May, 1900, feed sold at 70c.

OATS.

There are no heavy quantities offering from any quarter, and high grade feed oats are in very light stock, especially of white varieties. Trade this season has been largely in red oats, first consignments of which went at comparatively low prices, but for some time past they have been commanding nearly as good figures as white oats, and are giving very good satisfaction to consumers.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 15 @ 1 22 1/2
White, poor to fair.....	1 07 1/2 @ 1 12 1/2
Gray, common to choice.....	1 10 @ 1 20
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	90 @ 1 02 1/2
Red.....	95 @ 1 20

CORN.

Eastern product is arriving in moderate quantity, both large yellow and white, but is coming forward, as a rule, only as purchased, very little being consigned. Domestic makes a slim showing. Small yellow is in very scanty supply and is obtainable only in a retail way. In the matter of quotable values there are no changes to record.

Large White, good to choice.....	1 02 1/2 @ 1 05
Large Yellow.....	1 02 1/2 @ 1 05
Small Yellow.....	1 40 @ 1 45
Eastern Mixed.....	1 00 @ 1 02 1/2

RYE.

While there is not much doing, the market is moderately firm, quotations remaining as before.

Good to choice, new.....	1 02 1/2 @ 1 05
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BUCKWHEAT.

Quotable values continue as previously noted. Offerings and demand are both light.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

The market presents a strong tone for good to choice of nearly every variety, and especially so for Limas and all white beans. Most of the recent trading has been in white beans, both for shipment and on local account. There are no large quantities on the market and there is no disposition shown to crowd offerings to sale at concessions.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	3 00 @ 3 20
Lady Washington.....	2 75 @ 2 90
Butter, small.....	3 75 @ 1 00
Butter, large.....	— @ —
Pinks.....	2 50 @ 2 75
Bayos, good to choice.....	3 25 @ 3 50
Reds.....	3 75 @ 4 00
Red Kidneys.....	3 00 @ 3 50
Limas, good to choice.....	5 00 @ 5 15
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

Advices of recent date by mail from New York City give the following review of the bean market, prices quoted being per 60-lb bushel:

It has been more of a sellers' market this week, and most white varieties have made a slight gain in price, with rather a strong feeling at the close. Export orders from regular shipping points have come to hand slowly, but the Government has placed orders for over 1,100,000 lbs. of beans, of which 285,000 lbs. were shipped this week, and a like quantity is to go out for the next three weeks. Then the home jobbing demand has been considerably better, so that the fresh receipts have all been taken and some of the previous arrivals. Choice old Marrow have become firmly established at \$2.25, with fair sales at that. Some of the late receipts of new Marrow have been handled much better than the early lots, and two or three cars of these fine goods have been placed at \$2.15 @ 2.20; but there is scarcely any market at present for the lower

grades, quite a number of ears of which have accumulated here. It does not seem to be so much a question of price, the goods are not wanted. Buyers simply will not take Medium beans for Marrow, and it will certainly pay shippers to screen and pick more closely. Medium have advanced to \$2.05 @ 2.07 1/2 firm, with some holders now asking 2 1/2c more. Pea seem to be selling equally as well as Medium and they bring about the same price. One of the strong supports just now is the demand from the Government which is for small beans, and which is likely to be filled with foreign; if this stock is used it will take about all the goods here in bond, as the total arrivals thus far from Europe have only been a little over 8000 bags. Some of this imported stock is selling at \$1.80 @ 1.85, duty paid, but holders are asking \$1.90 for the best. Red Kidney have ruled steady but are slow; choice lots held generally at \$2.25. White Kidney quiet. Yellow Eye have had sales at \$2.25, and the feeling is firm. Turtle Soup very dull and slightly weaker. California Lima have advanced 10c; late sales mainly at \$3.45, but some lots held higher. Considerable lots of German Giants have sold at \$2.65. Green and Scotch peas steady but quiet.

DRIED PEAS.

Market is firm but quiet. The inactivity is due to lack of offerings and not to absence of demand.

Green Peas, California.....	2 00 @ 2 15
Niles Peas.....	2 00 @ 2 15

WOOL.

Previously recorded conditions continue to prevail in the local wool market. There is little doing at present, and business is apt to be of a holiday character for a month or six weeks, or until the spring clip begins to put in an appearance in quotable quantity. The outlook remains excellent, both for a fine clip and for a firm market.

SPRING.

Oregon Eastern, choice.....	13 @ 16
Oregon Eastern, fair to good.....	11 @ 13
Oregon Valley.....	17 @ 20

FALL.

Humboldt and Mendocino.....	16 @ 17 1/2
Middle Counties, defective.....	9 @ 12
Northern, free.....	11 @ 14
Northern, defective.....	9 @ 11
Southern Mountain.....	9 @ 11
San Joaquin Plains.....	— @ —
San Joaquin Lamb.....	— @ —

HOPS.

There is some inquiry for desirable qualities, but at no improvement over the low figures recently current. Stocks of choice have been practically cleaned up; there are not many of good medium quality remaining in first hands, but plenty of low grade stock, the latter receiving scarcely any attention.

Good to choice, 1899 crop.....	6 @ 9
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The following review of the hop situation is furnished by a New York authority, coming through by mail of recent date:

There has been steady buying in the interior of this State, and the prices paid have ranged from 6c. to 12c.; more would have been paid if a higher quality could be found. On the Pacific coast trading has continued light, chiefly because the most desirable grades are held at prices above buyers' views. English mail and cables indicate quieter markets and a little easier feeling on the class of goods that comprise the bulk of the offerings; high grade hops are already getting scarce and well sustained in consequence. German advices are higher and firm. The local market is in much the same condition as previously reported. A fair amount of stock is moving and there is a generally steady tone to values. Besides the goods that have been going to brewers there has been some trading between dealers, chiefly in grades worth say 9 @ 11c.; these have included some pretty good lots. The relative scarcity of strictly choice quality has enabled sellers to get 13 1/2 @ 14c. for these, and there are some shipping orders in hand at those figures that cannot be filled. Poor hops are more than plenty, and when sold have to go at low prices.

HAY AND STRAW.

The hay market shows no appreciable change. Offerings of other than choice to select continue excessive. A little hay of fancy quality sells above quotations. Straw market remains quiet, with arrivals light but enough for requirements.

Wheat.....	7 00 @ 9 50
Wheat and Oat.....	7 00 @ 9 00
Oat.....	6 50 @ 8 50
Barley.....	6 00 @ 7 00
Alfalfa.....	5 00 @ 7 00
Timothy.....	— @ —
Compressed.....	7 00 @ 9 50
Straw, 3/4 bale.....	30 @ 45

MILLSTUFFS.

Bran has been in fair request, and with stocks lighter than in the early part of the month, the market has presented a slightly firmer tone without being quota-

ably higher. Prices and general tone of the market for other millstuffs remained practically as last quoted.

Bran, 3/4 ton.....	13 00 @ 14 00
Middlings.....	15 00 @ 18 00
Shorts, Oregon.....	13 00 @ 15 00
Barley, Rolled.....	15 50 @ 16 50
Cornmeal.....	23 50 @ 24 00
Cracked Corn.....	24 50 @ 25 00

SEEDS.

Owing to the inactivity prevailing in the seed market there is little other at present than the views of holders upon which to base quotations. Values remain nominally the same as noted in last review.

Mustard, Trieste.....	Per cwt. 3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25

Canary.....	Per lb. 3 1/4 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	7 @ 9

BAGS AND BAGGING.

There is no activity to record in the market for Grain Bags, and not much trading likely to be experienced for several months yet. The few contracts being entered into for importations the coming summer of Calcutta sacks, are mainly at 6 @ 6 1/2c, the lower figure being for large quantities. Wool sacks are expected to be in fair request in a month or two, market for same showing a firm tone.

Calcutta Grain Bags, buyer June-July.....	6 1/4 @ —
Calcutta Grain Bags, spot.....	6 1/4 @ —
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ —
State Prison Bags, 3/4 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/4
Fruit Sacks, cotton.....	6 1/4 @ 7 1/4

HIDES, PELTS AND TALLOW.

Hide market has been very quiet, but there has been no quotable decline. Pelts ruled fairly firm as to price, with purchasing at the moment not very brisk. Tallow met with rather prompt sale, and brought as a rule full current figures.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 1/2	10 1/2
Medium Steers, 48 to 56 lbs.....	10 1/2	9 1/2
Light Steers, under 48 lbs.....	10	9
Heavy Cow Hides, over 50 lbs.....	10 1/2	9 1/2
Light Cow Hides, under 50 lbs.....	10	9
Wet Salted Kip.....	10	9
Wet Salted Veal.....	10	9
Wet Salted Calf.....	11	10
Dry Hides.....	18	14
Dry Kip and Veal, 11 to 16 lbs.....	17	13
Dry Hides, under 4 lbs.....	18	15
Salted Horse Hides, large.....	2 50 @ —	—
Salted Horse Hides, medium.....	2 00 @ —	—
Salted Horse Hides, small.....	1 00 @ —	—
Dry Horse Hides, large.....	2 00 @ —	—
Dry Horse Hides, small.....	75 @ 1 00	—
Dry Colts' Hides.....	50 @ 75	—
Pelts, long wool, 3/4 skin.....	1 00 @ 1 25	—
Pelts, medium, 3/4 skin.....	70 @ 90	—
Pelts, short wool, 3/4 skin.....	35 @ 60	—
Pelts, shealing, 3/4 skin.....	20 @ 35	—
Deer Skins, best summer.....	27 1/2 @ 30	—
D. or Skins, good medium.....	20 @ 22 1/2	—
Deer Skins, thin winter.....	— @ 10	—
Elk Hides.....	10 @ 12	—
Tallow, good quality.....	4 1/2 @ 5	—
Tallow, No. 2.....	4 @ 4 1/2	—
Goat Skins, perfect.....	30 @ 37 1/2	—
Goat Skins, damaged.....	10 @ 20	—
Kid Skins.....	5 @ 10	—

HONEY.

Stocks are light and must continue so until the opening of the new season. Present business is confined almost wholly to light jobbing operations and at generally unchanged values.

Extracted, White Liquid.....	7 1/2 @ 8
Extracted, Light Amber.....	7 @ 7 1/2
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	11 1/2 @ 12 1/2
Amber Comb.....	8 @ 10

BEESEWAX.

Values for this commodity are decidedly steady. There is a fair demand, but in the absence of noteworthy offerings there is very little doing.

Good to choice, light, 3/4 lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Beef is ruling slightly lower, demand being hardly equal to the supply, but there is little likelihood of any radical changes in values in the near future. Veal continues in light receipt and desirable qualities are commanding good figures. Market for Mutton and Lamb is fully as firm as last quoted. Hogs of desirable sizes, small and medium being given the preference, are selling to fully as good advantage as for some weeks preceding. Following are rates from slaughterers to dealers:

Beef, first quality, dressed, net 3/4 lb.....	6 1/2 @ 7
Beef, second quality.....	6 1/4 @ —
Beef, third quality.....	6 1/4 @ 6

Mutton—ewes, 7½@8c; wethers.....	8 @ 8½
Hogs, hard grain fed, medium.....	5½@ 5½
Hogs, small, fat.....	5½@ 5½
Hogs, large, hard.....	5 @ 5½
Hogs, acorn-fed.....	—@—
Hogs, feeders.....	5 @ 5½
Hogs, country dressed.....	5½@ 6
Veal, small, ½ lb.....	8 @ 10
Veal, large, ½ lb.....	8 @ 9
Lamb, spring, ½ lb.....	15 @—

POULTRY.

Market for most kinds of poultry was in generally better shape for the selling and producing interests than preceding week, Turkeys being about the only noteworthy exception. There were excessive receipts of this fowl, particularly of dressed stock. Young Chickens were in most active request and sold to best advantage. Old Chickens which were large and fat did not lack for custom and brought comparatively good figures.

Turkeys, dressed, ½ lb.....	12 @ 15
Turkeys, live hens, ½ lb.....	12 @ 13
Turkeys, live gobblers, ½ lb.....	11½@ 12½
Hens, California, ½ dozen.....	3 50 @ 4 50
Roosters, old.....	4 00 @ 4 50
Roosters, young (full-grown).....	5 00 @ 5 50
Fryers.....	4 50 @ 5 00
Broilers, large.....	4 00 @ 4 50
Broilers, small.....	3 00 @ 3 50
Ducks, ½ dozen.....	4 00 @ 5 00
Geese, ½ pair.....	1 75 @ 2 00
Goslings, ½ pair.....	1 75 @ 2 00
Pigeons, old, ½ dozen.....	1 50 @—
Pigeons, young.....	2 50 @ 3 00

BUTTER.

Choice to select fresh butter was in only moderate supply, and market for this description was moderately firm, some dealers having trouble in filling all orders, and occasional sales were made above quotations. The more common grades were plentiful, with market for latter sorts weak. From fair to most select qualities there was a range in prices of nearly 10c.

Creamery, extras, ½ lb.....	25 @—
Creamery, firsts.....	24 @ 25
Creamery, seconds.....	23 @ 24
Dairy, select.....	22½@ 24
Dairy, seconds.....	18 @ 21
Dairy, soft and weedy.....	—@—
Mixed store.....	14 @ 16
Creamery in tubs.....	18 @ 21
Pickled Roll.....	—@—
Firkin, California, choice to select.....	19 @ 22
Firkin, common to fair.....	16 @ 18

CHEESE.

The same absence of firmness as previously noted is being experienced in the market for cheese, especially for most recent deliveries from the press, receivers being anxious to keep as closely sold up as possible, in order to reduce to a minimum any losses through shrinkage in weight.

California, fancy flat, new.....	11 @ 11½
California, good to choice.....	10 @ 11
California, fair to good.....	9½@ 10½
California Cheddar.....	—@—
California, "Young Americas".....	10 @ 12

EGGS.

Market showed more steadiness than preceding week, the reduced figures established causing an improved demand. With choice eggs now retailing at 25c per dozen, it is believed the consumption will be sufficient to absorb supplies and prevent accumulations for at least a few weeks to come.

California, select, large, white and fresh.....	22 @—
California, select, irregular color & size.....	20 @ 21
California, good to choice store.....	18 @ 21
Eastern, as to section and grading.....	—@—
Eastern, cold storage.....	15 @ 17

VEGETABLES.

There was a very firm market for Onions, with supplies light, and only a small proportion of offerings which were thoroughly sound. Choice to select are likely to rule still higher in the near future. Spring vegetables were not in large supply and it was the exception where stock in first-class condition did not meet with prompt sale at good figures. Tomatoes in fine condition and choice String Beans were especially favored with a firm market.

Beans, String, ½ lb.....	4 @ 6
Cabbage, choice garden, ½ 100.....	50 @—
Cauliflower, ½ dozen.....	50 @—
Egg Plant, ½ lb.....	10 @ 12½
Garlic, ½ lb.....	5 @ 6
Onions, Yellow, Cal., good to choice.....	1 50 @ 2 00
Onions, Oregon, ½ cental.....	1 75 @ 2 00
Peas, Sweet, garden, ½ lb.....	3 @ 4
Peppers, Green Chile, ½ lb.....	4 @ 5
Peppers, Bell, ½ lb.....	8 @ 10
Rhubarb, ½ box.....	—@—
Squash, Marrowfat, ½ ton.....	—@—
Squash, Summer, ½ box.....	75 @ 1 00
Tomatoes, Los Angeles, ½ box.....	1 00 @ 1 50
Tomatoes, Bay, ½ box.....	—@—

POTATOES.

Receipts of potatoes were not nearly as heavy from Oregon as preceding week, and market in consequence presented a better tone. Quotable rates were not materially changed, but sales were more readily effected at full current rates, buyers taking hold with more confidence. New potatoes, mostly volunteers, are arriving in moderate quantity and are commanding very good prices. At the close potato

market showed more ease. Sweet potatoes were in fair supply, sufficient for the immediate demand, with values in the main steady.

Burbanks, River, ½ cental.....	75 @ 1 00
Burbanks, Bay counties, ½ cental.....	—@—
Burbanks, Humboldt.....	90 @ 1 10
Burbanks, Oregon.....	80 @ 1 15
River Reds.....	—@—
Burbanks, Salinas, ½ cental.....	1 25 @ 1 40
Early Rose.....	80 @ 95
Garnet Chile.....	85 @ 1 00
New Potatoes, ½ lb.....	1½@ 2
Sweet, River, ½ cental.....	—@—
Sweet Merced.....	1 50 @ 1 60

The Fruit Market.

FRESH FRUITS.

In the way of fresh fruits, other than citrus and tropical, the Apple is the only sort now offering in quotable quantity. There are no heavy stocks of Apples, and only a small proportion can be termed choice to select. For high grade fruit the market is firm at the quotations, and some of very superior quality are held above quotable rates. Seriously defective stock moves slowly at low figures, the most positive inquiry being almost wholly for choice. A carload of Eastern Apples, mostly Baldwin and Ben Davis, were closed out at \$5@6 per bushel, the latter figure being for choice of the Ben Davis variety.

Apples, fancy, 4-tier box.....	1 50 @ 1 75
Apples, good to choice, ½ 50-lb box.....	75 @ 1 25
Apples, common to fair, ½ 50-lb box.....	25 @ 50

DRIED FRUITS.

Although there are no changes to record in quotable values for cured and evaporated fruits, there is a generally better tone than has been experienced since the beginning of the year. While there is no brisk movement, jobbers are forwarding some assorted cars East on orders, and moderate quantities are going outward by sea to different foreign points. There is considerable inquiry, mainly from the Atlantic side, which points to increased business in the near future. Taken as a whole, the market shows healthy condition, and has seldom been at corresponding date in much better shape for the holding and producing interests. Indications are there will be no necessity of carrying any stocks of consequence into the new season, not even of Prunes, although supplies of this fruit are the heaviest on the list, and prospects at the moment are not brilliant for a speedy clean-up, the present movement on both foreign and local account being light. Values for Prunes, however, show no weakening, there being no evidences of purchases being possible at easier figures than have been lately current. The market for Evaporated Apples has not been locally in very satisfactory shape, but with improved condition reported East, not only in increased activity but in firmer prices, the change for the better on the Atlantic side is likely to be reflected with favorable effect on the situation here.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, ½ lb.....	10½@ 12
Apricots, Royal, fancy.....	12½@ 13
Apricots, Moorpark.....	13 @ 15
Apples, in 50-lb boxes, rings, pressed, fancy.....	7½@—
Apples, 50-lb boxes, rings, pressed, good to choice.....	6 @ 7
Figs, White, fancy pressed.....	6½@ 7½
Peaches, unpeeled, good to choice.....	6¼@ 7½
Peaches, unpeeled, fancy.....	7½@ 8
Peaches, peeled, in boxes.....	12½@ 15
Pears, unpeeled Bartlett's, halved, fancy.....	9 @ 10
Pears, halved, unpeeled Bartlett's.....	6½@ 8
Pears, quartered, unpeeled Bartlett's.....	6½@ 7½
Plums, Black, pitted.....	6½@ 8
Plums, White and Red.....	7 @ 7½
Prunes, in sacks 40-50s.....	4 @ 4½
50-60s.....	3½@ 3¾
60-70s.....	3¾@—
70-80s.....	3¾@—
80-90s.....	3 @—
90-100s.....	2½@—
110-130s.....	2 @—
Prunes in boxes, ½ c higher for 25-lb boxes, ¼ c higher for 50-lb boxes.	
4 sizes Santa Claras and equal.....	2¾@—
4 sizes San Joaquin and Northern.....	2¼@ 2½
Prunes, Silver.....	4 @ 7

COMMON SUN-DRIED.

Apples, sliced.....	4 @ 5
Apples, quartered.....	4 @ 5
Figs, Black.....	3 @ 4
Figs, White.....	—@—
Peaches, unpeeled.....	—@—

Mail advices of late date from New York City furnish the following report of the dried fruit market:

Exporters have been fairly liberal buyers of prime evaporated apples and the close clearance of stock has made quite a firm market; most of the business has been done at 7c., but we hear of 7½c. bid toward the close and holders asking 7½c. Inferior stock is neglected, and several lots can be bought at 6@6½c. Choice and fancy grades are held at 7½@9c., a few extra fancy still higher, but these qualities go chiefly to jobbing trade and that outlet is small at present. Sun-dried sliced are rather dull but unchanged in price, except possibly some of the more inferior grades which can be bought cheaper. Choice, large bright quarters

are wanted by exporters and would bring 6c. in lines; a considerable part of the stock is of quality to sell at 5½@5¾c., while small lots of quite ordinary fruit go at 5c. or less. Chops rather easy; prime lines offering at 1¼c. Fine, well packed cores and skins are steady at 1¼c., and have some expert inquiry, but we hear of sales of bag stock at \$1.00@1.15 per 100 lbs. Few small lots of North Carolina peeled peaches here and jobbing at 12@12½c. Raspberries in light stock but dull. Cherries have had a few sales in range of 14@15½c. as to quality. Huckleberries almost nominal for want of stock. Very few blackberries here and demand light. California apricots scarce and firm. Peeled peaches steady but quiet; unpeeled have a little more inquiry and are held with some confidence. Large business has been done in prunes, chiefly for export; shippers have sent to Europe an average of about 50,000 cases a week for the past two months; most of these were 70s to 90s, the latter at about 4c. and 70s@80s at 4½@4¾c. All the small sizes are firm, but there are plenty of the larger sizes and these are slow, 40s selling at about 7c. in boxes.

Apricots, Cal., Moorpark, 1899, ½ lb.....	15 @ 18
Apricots, Cal., Royal, 1899, ½ lb.....	12 @ 14
Peaches, Cal., 1899, peeled, ½ lb.....	18 @ 22
Peaches, Cal., 1899, unpeeled, in bxs, ½ lb.....	8 @ 9
Peaches, Cal., 1899, unpeeled, in bags, ½ lb.....	7½@ 8¾
Prunes, Cal., 1899, ½ lb.....	3½@ 7

RAISINS.

The market for raisins remains practically in same condition as noted in last review. The selling rates established by the Growers' Association remain unchanged. There is no activity to record, but there is about as much doing as could be reasonably expected, considering the time of year, the light supplies and the scarcity of choice stock. A large proportion of the present business is in seeded raisins.

F. O. B. FRESNO DELIVERY.

London Layers, 6-crown, ½ box.....	—@—
do do 5-crown, ½ box.....	—@—
do do 4-crown, ½ box.....	—@—
do do 3-crown, ½ box.....	1 60 @—
do do 2-crown, ½ box.....	1 50 @—
Valencia Layers, 20-lb box.....	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6¼@—
Loose Muscatel, seedless.....	5 @—
Pacifics.—2-crown loose Muscatel, 5¼c; 3-crown, 6c; 4-crown, 6½c; seedless, 4¾c.	
Oriental.—2-crown loose Muscatel, 4¾c; 3-crown, 5¼c; 4-crown, 6c.	

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, ½ lb, 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, ½ lb, 8½c; choice, 7½c; standard, 6½c; prime, 5c. Unbleached, 5c.

Loose Valencia.—Fancy, ½ lb, 5¼c; choice, 4¾c; standard, 3¾c.

Valencia Clusters.—Fancy, ½ lb, 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Oranges are in increased supply and market is lower than at date of last report, cold weather most of the week aiding materially in bringing about this result. Recent auction sales show a decline of about 10 per cent in value of high grade Navels, and nearly 50 per cent reduction in prices realized for most common qualities, the latter being in very poor request. Lemons have been tending against sellers, with lower average prices, both at auction and at private sale. Limes remain quotably unchanged, but there is no active inquiry for either the imported or the home article.

Oranges—Navels, ½ box.....	1 25@ 2 50
California Seedlings.....	50@ 1 00
California Tangerine, ½ box.....	—@—
Grape Fruit, ½ box.....	1 00@ 2 00
Lemons—California, select, ½ box.....	2 50@—
California, good to choice.....	1 50@ 2 00
California common to fair.....	75@ 1 25
Limes—Mexican, ½ box.....	4 00@ 4 50
California, small box.....	50@ 75

NUTS.

There are fairly liberal stocks of Shelled Almonds, but no large quantities of Unshelled or of Walnuts, especially of choice qualities. The demand, however, is light and the market is not firm for either variety. Peanuts remain in scanty supply and current values are being well maintained for both imported and domestic product.

California Almonds, shelled.....	17 @ 20
California Almonds, paper shell, ½ lb.....	11 @ 12
California Almonds, soft shell.....	10 @ 11
California Almonds, hard shell.....	6 @ 7
Walnuts, White, soft shell.....	10 @ 11
Walnuts, White, California, standard.....	9 @ 10
Chestnuts, California Italian.....	9 @ 10
Peanuts, California, fair to prime.....	4½@ 5½
Peanuts, Eastern, hand-picked.....	6 @ 8½
Pine Nuts.....	5 @ 5½

WINE.

Some transactions are reported in 1899 wines at 15@18c per gallon wholesale, San Francisco delivery, the top figure being for some very choice grown in Sonoma county. As the yield was light, there should be a good market for the entire output of the season. The total shipments of wine from this port by sea were 3,518,631 gallons and 7073 cases,

valued at \$1,157,965, showing a decrease of 1,626,372 gallons and 822 cases, as compared with 1898. The value of the shipments by sea for 1898 was \$1,824,259, being \$666,294 greater than for last year.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks.....	178,448	3,231,348
Wheat, centals.....	204,228	2,709,499
Barley, centals.....	117,412	4,052,289
Oats, centals.....	6,490	575,618
Corn, centals.....	2,990	89,519
Rye, centals.....	810	85,315
Beans, sacks.....	6,020	294,048
Potatoes, sacks.....	43,217	775,781
Onions, sacks.....	1,961	123,167
Hay, tons.....	2,970	101,169
Wool, bales.....	216	35,530
Hops, bales.....	386	8,512

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks.....	78,376	1,948,307
Wheat, centals.....	182,602	2,327,232
Barley, centals.....	13,365	3,197,275
Oats, centals.....	214	26,862
Corn, centals.....	1,102	11,424
Beans, sacks.....	660	18,731
Hay, bales.....	3,035	67,588
Wool, pounds.....	12,620	3,656,595
Hops, pounds.....	97,028	765,764
Honey, cases.....	2	3,239
Potatoes, packages.....	417	48,715

California Dried Fruit at New York.

NEW YORK, Jan. 24.—California dried fruits: Market quiet and steady. Evaporated apples, common, 6@6½c; prime wire tray, 7@7½c; choice, 7½@8c; fancy, 8½@9c.

Prunes, 3½@6c.
Apricots, Royal, 13@15c; Moorpark, 15@18c.
Peaches, unpeeled, 7½@10c; peeled, 20@23c.

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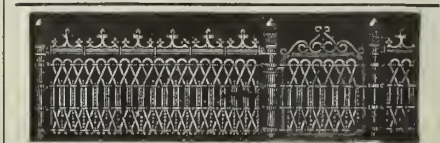
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CORRESPONDENCE.

Nevada County Notes.

TO THE EDITOR:—The spring frost last year killed most of the fruit of all kinds above Penn valley, or about 1200 feet elevation, leaving a fair crop of fruit in west end of county, for which a good price was obtained.

I am raising a young orchard of nearly all kinds without irrigation. Sometimes I water by hand with team the first year. It is beginning to bear. Figs do best. Apricot trees die. I am trying them on higher ground where frost is lighter. All other trees promise well.

Almond trees grow well; frost has killed most of the fruit so far. If they do not bear I will graft into plums and prunes. I had difficulty in raising almond seedlings. The gopher would feed on the nut after the tree had grown a few inches above the ground. I mixed them with peach and other kinds, so when the gopher ate one lot he did not know where to look for another. I saved some in that way. I planted in boxes and tins till they were a year old. Perhaps the bitter almond would be proof against gophers.

Grasshoppers are the worst thing I have had since starting orchard. They come about once in five or six years. The hare is also troublesome to young trees and vines. I prune so high the hare cannot reach the top (30 inches) and protect the trunk with newspaper wrapping. The woolly aphis appeared on two or three apple trees last June. I brushed them off by hand a few times and they disappeared. Heat and scarcity of water or some enemy may be the cause.

Drake's seedling almond seems to bear better here than any other. Is there a machine for extracting the nuts? Would not this increase value of hardshells?

[There is a powerful and satisfactory machine for this purpose made by W. G. Read & Co. of Colusa. We understood this machine was largely used last fall in getting out apricot kernels for shipment to Europe. Whether it would pay to grow hardshell almonds for this purpose in the face of the quantity of kernels to be had from softshells we do not know.—ED.]

FARMERS SELLING PRODUCE.

I also wish to inquire whether it is proper to seek for information through the PACIFIC RURAL PRESS on the business of raising and selling the products of the farm? The PRESS aids in raising; can it not inform the farmer what his privileges are in selling? I know of no question that more deeply interests farmers. I have been raising and selling produced for forty years, but they are passing city and county ordinances every year, and they read "peddlers' acts" to us, which it seems to me only apply to a man with a pack on his back. I have read somewhere: "What a farmer raises and sells shall not be called peddling." Cannot the RURAL tell us how this matter stands?

BENJAMIN SANFORD.

Fernley, Nevada county.

[This is an important proposition. Will some of the many readers of the PACIFIC RURAL PRESS who are both good lawyers and good farmers tell us the status of the matter and how the farmer really stands affected by peddlers' ordinances?—ED.]

Telephone Main 199.

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A Promising Outlook for California.

TO THE EDITOR:—I feel genuine pleasure in the propitious promises for California agriculture. It seems to me somewhat like the opening of the inter-oceanic canal. At all events, its benefits will come sooner, and, I trust, prove a perpetual benefaction. I refer to the present demands of the Anglo-Boer war and those of the populous East. California is in a direct commercial line of trade, for wheat, for meat, for horses, for mules, and for numerous other California products.

When I traveled through the great State last year, and saw the immense crops and possibilities of the fertile valleys and rich mines, I thought how fortunate is this grand Pacific coast for Eastern commerce. How fortunate for army and navy demands in the Philippines, and for our increasing trade with China and Japan.

Both the English and the Boers, and all Africa, for the next five years at least, must largely depend upon the United States for wheat and meat, and numerous other agricultural commodities. The East needs our horses and mules now urgently, and California can promptly supply these to the belligerents. But a broader need is felt all over the East for these animals for agricultural purposes and for domestic uses. It will be as it was long ago in our Eastern, Western, Southern and Middle States—draft, carriage and saddle horses were a necessity. Until railroads and macadam roads are more extended, these useful animals must be in great demand. It will be many years before trolleys and automobiles will supplant the general use of horses and mules, as they are beginning to threaten the noble horse and the serviceable mule more and more every day. Notwithstanding all these menacing changes, good—really good—horses and mules will always be in demand at remunerative prices. The sales of horses in New York always have, and always will, command good prices, even at the merciless auction sales.

In the Philippines, agricultural implements will come into great demand. And nowhere can these be more readily supplied, and of the very best quality, than by California. As an agriculturist, and familiar with such implements in England and France, I say with pride and justice, that nowhere have I ever seen agricultural implements comparable with those I saw in operation in California. I shall ever cherish the trial I enjoyed in the San Joaquin valley, in riding around a 5000-acre wheat field on a forty-horse reaper, and seeing the reaping, threshing, winnowing and bagging performed with the regularity and exactness of clockwork.

I then feel justified in commending activity in the cultivation of wheat, the raising of cattle, sheep and swine for meat, the increase of the dairy, and the raising of first-class horses and mules, and the manufacture of all kinds of farming implements, wagons, harness, etc. Especially I would advise the securing of agencies in the Philippines and the East.

I see a hopeful field in the great East for the great West. I am hopeful and sanguine. The times need no prophecy.

A. S. THEATL. M. D.

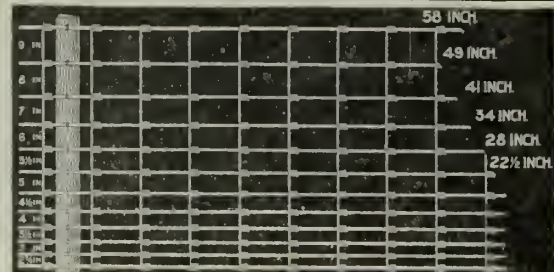
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Patrons of Husbandry.

The Worthy Master in Sacramento County.

TO THE EDITOR:—On Saturday, the 7th, assisted by Sister W. W. Greer, I installed the officers of Elk Grove Grange. In the forenoon the third and fourth degrees were conferred upon a class. After this the usual bountiful Harvest Feast was enjoyed by the many Patrons who had turned out.

The roads were a little muddy, but nothing could dampen the ardor of the enthusiastic Grangers.

We wish the future of Elk Grove Grange to be as prosperous under the leadership of its new officers as it was the past year. Indeed, greater things are expected, for, if I mistake not, the Sacramento county people are progressive.

At Sacramento there was a great Grange day, the occasion being the joint installation of the newly chosen officers of Sacramento Grange, No. 12, and Sacramento County Pomona Grange, P. of H. Besides the members of these Granges, there were present many members of the Patrons of Husbandry representing other Granges. Mrs. Hetty Dunn, on being installed as Lecturer of Pomona Grange, said:

"To me is assigned the important task of imparting instruction to the members of the Grange, also to encourage and urge our members to become readers, writers and speakers in our Grange meetings. In the latter direction all my efforts will prove fruitless without the hearty co-operation of the Patrons in our jurisdiction.

"In union there is strength. Let us all, then, have one firm purpose, and let that be to labor with such harmony and good will throughout the coming year that the close of the nineteenth century will prove that the Patrons of Husbandry everywhere have labored for the good of their Order, their country and mankind."

San Jose Grange will have to look to its laurels, although it is increasing in numbers rapidly and its newly elected officers are learning the work. I understand that Sacramento Pomona Grange has determined to make the Grange pay in Sacramento county. I also heard it whispered that American River Grange is going to do the work the best of any Grange in the State.

We want to hear from Florin, Roseville and Oak Park. We believe that there is a new era dawning, and we say "Take cheer!"

G. W. WORTHEN, Master.

Tulare Grange.

TO THE EDITOR:—After the transaction of routine business, Bro. Berry, of Committee on Good Roads, read a report of the special committee's attendance at the meeting of the San Joaquin Valley Commercial Association, in Hanford, on the 6th of this month; the subject for consideration at that meeting being good roads.

WIDE TIRE LAW.—The S. J. V. Commercial Association is giving much consideration to good roads, and have appointed a committee, consisting of Hon. E. T. Cosper and E. E. Young, of the Kings county Chamber of Commerce, and John Tuohy, of Tulare Grange, to report on the advisability of enforcing the Wide Tire Law. At the next meeting of the Association, to be held in Madera, February 3rd, the committee will report, strongly urging the enforcement

of the Wide Tire Law, as essential to good roads.

FORESTRY.—A letter from U. S. Senator Penrose, of Pennsylvania, to Bro. E. C. Shoemaker, acknowledging receipt of Tulare Grange resolution asking Congressional appropriation for the survey and preservation of our forests was read. Senator Penrose will give the appropriation his support.

SEEDS AND BOOKS.—A letter from Hon. J. C. Needham was read saying he will at an early date send Tulare Grange garden seeds, and one from Hon. Geo. C. Perkins, saying if the secretary will send him the names of members of Tulare Grange, he will send them the Year Book for 1898.

A resolution was passed requesting the Supervisors to investigate if there is danger of the introduction of phylloxera into this county, and if so to take the necessary steps to prevent it.

CO-OPERATION.—Bro. Thos. Jacobs, a delegate from this Grange to the fruit growers' meeting in San Jose, gave an interesting account of the meeting. He has the most sanguine hopes of the formation of a Fruit Growers' Co-operative Association. He is one of the vice-presidents.

"Why Join the Grange?" by Worthy Master G. W. Worthen, of Cal. State Grange, was read. He gives many reasons; one needs special mention: "Because it is the duty of farmers to co-operate with one another, if they would successfully meet the influence of organization in every direction; and secure for wife and home a fair share of what the harvest yields."

Sisters Styles, Berry and Fleming were asked by the Worthy Lecturer to read at our next meeting papers on "What conditions now prevailing about your homes can be improved and help you socially?"

GRANGE WORK.—The Lecturer also announced that at the next meeting of the Grange the subject, "The great need of farmers is association, combination and co-operation," will be considered.

The third and fourth degrees were conferred impressively on a class of three.

After the harvest feast the officers for the ensuing year were installed: Master, C. J. Berry; Overseer, Frank Styles; Lecturer, John Tuohy; Secretary, Sister Bertha J. Morris; Assistant Steward, Thos. Jacob; Treasurer, Julius Forrer; Chaplain, Sister Ellen Fleming; Gatekeeper, A. J. Woods; Pomona, Sister Kate Mull; Flora, Sister Nellie Scott; Ceres, Sister Adle Slaughter. Bro. E. C. Shoemaker will be Assistant Secretary.

After his installation as Worthy Master, Bro. Berry addressed the Grange, during which he mentioned that before the next meeting of Tulare Grange he intends attending a Farmers' Institute at Dinuba and one at Porterville.

READING COURSE.—At these meetings, the Grange requested Bro. Berry to have discussed and considered the educational advantage of a Home Reading Course in Agriculture; such as are successfully carried on in Pennsylvania, New York, West Virginia, Connecticut, and other States, a full account of which is given in Bulletin 72. Office of Experimental Stations, U. S. Department of Agriculture.

It is fully believed such a systematic study of agriculture will result in much better educational effects than will a desultory attendance and discussion at a Farmers' Institute. J. T.

[There should be no comparison between the Farmers' Institute and the Farmers' Reading Course. They are both parts of a systematic effort for agricultural advancement, and they support and supplement each other. The Institute arrests attention and affords opportunity for discussion. The more reading done in a community the better the Institute will be, and the more successful the Institute the more members for the Reading Course. The two agencies are thus mutually promotive of each other, and both are at the foundation of recent agricultural awak-

ening. Let the Institute attract attention and awaken interest; let the Reading Course prolong and encourage that interest. Do not think of choosing which of the two; take them both if you wish to be up to date. —Ed.]

Grange Elections.

LODI GRANGE.—Master, W. H. Tredway; Overseer, M. W. Shidy; Lecturer, Ernest Ferdun; Steward, C. P. Allison; Assistant Steward, J. Thompson; Chaplain, Sister Lizzie Howe; Treasurer, Ezra Fiske; Secretary, J. D. Huffman; Gatekeeper, J. A. Anderson; Ceres, Mrs. Tredway; Pomona, Mrs. Lillie Flora, Mrs. Huffman; Lady Assistant Steward, Mrs. Thompson.

SONOMA POMONA GRANGE.—Master, W. D. Houx; Overseer, H. Johnson; Lecturer, W. H. Skinner; Steward, A. R. Galloway; Assistant Steward, George Connors; Chaplain, Sister Grover; Treasurer, G. N. Whittaker; Secretary, M. B. Mac; Gatekeeper, F. Butler; Pomona, Sister Trowbridge; Flora, Sister Johnson; Ceres, Sister C. H. Butler; Lady Assistant Steward, Sister Houx; Organist, Sister Skinner.

CAPITAL GRANGE had a grand installation meeting. State Organizer Erskine Greer was the installing officer, assisted by J. D. Cornell of American River Grange, and the following officers were duly installed: Worthy Master, Mrs. Hetty A. Dunn; Overseer, W. F. Collins; Lecturer, Dr. I. G. Shaw; Steward, C. E. Dailey; Assistant Steward, Hetty P. Dunn; Secretary, Mrs. C. E. Dailey; Treasurer, Mrs. R. Davis; Chaplain, Mrs. J. Stillson; Gatekeeper, G. W. White; Pomona, Mrs. W. W. Ellis; Ceres, Mrs. W. F. Collins; Flora, Mrs. E. Gross; Lady Assistant Steward, Effie Stillson; Organist, Minerva Daly. After the installation ceremonies there was a feast, and then a programme of literary exercises.

A Fin de Siecle Calendar.

"Keeping everlastingly at it brings success" is the trite but taking motto of the great advertising agency of N. W. Ayer & Son, Philadelphia, and the aphorism we continue to quote, as it can't be improved. The broad gauge policy of the concern is shown in the style of calendar they yearly issue—solid, durable, artistic, combining the useful and the ornamental in an eminent degree. The one for 1900 is just received and goes on the wall of the PACIFIC RURAL PRESS office, a thing of beauty and a joy for—365 days. Just for accommodation they send it postpaid to any one who sends them 25 cents—a big money's worth.

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Breeders' Directory.

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List of U. S. Patents for Pacific Coast Inventors.

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FOR PACIFIC COAST.

FOR WEEK ENDING JANUARY 9, 1900.

- 641,180.—SWIMMING APPARATUS—J. S. Bartholomew, Guerneville, Cal.
610,864.—NECKTIE FASTENER—J. W. Blundon, S. F.
610,865.—PILE DRIVER—J. W. Blundon, S. F.
641,185.—VALVE—C. A. Borein, Oakland, Cal.
640,875.—ADVERTISING DEVICE—E. Cherry, S. F.
641,192.—STEERING MECHANISM—J. Christensen, S. F.
640,768.—BUCKET DREDGER—J. H. Gray, S. F.
640,902.—GANG EDGER—D. B. Hanson, Seattle, Wash.
641,010.—HEMP BRAKE—J. Heaney, Gridley, Cal.
641,206.—FLOORING—S. Hedgos, Los Angeles, Cal.
641,143.—WINDMILL—J. O'Toole, S. F.
640,933.—LUNCH BOX—A. J. Osborne, Pomona, Cal.
641,145.—SAFETY HOIST—T. H. Oxnam, Los Angeles, Cal.
640,940.—CATTLE GUARD—W. T. Payno, Tacoma, Wash.
641,229.—PUMP—A. L. Reynolds, Santa Ana, Cal.
640,947.—HOT AIR SYRINGE—J. L. Richards, S. F.
640,949.—AIR COMPRESSOR—E. A. Rix, S. F.
641,233.—WAVE MOTOR—C. F. A. Roell, Los Angeles, Cal.
641,239.—CANDLE HOLDER—H. Schroeder, Spokane, Wash.
641,242.—WINDOW SCREEN—R. M. Spencer, S. F.
640,971.—GOVERNOR—A. C. Stewart, Santa Paula, Cal.
640,849.—NUT LOCK—L. Wado, Escalon, Cal.
640,980.—ANIMAL TRAP—C. M. Williams, Los Angeles, Cal.
641,251.—WATER LIFTER—L. H. Woolley, Oakland, Cal.

Notices of Recent Patents.

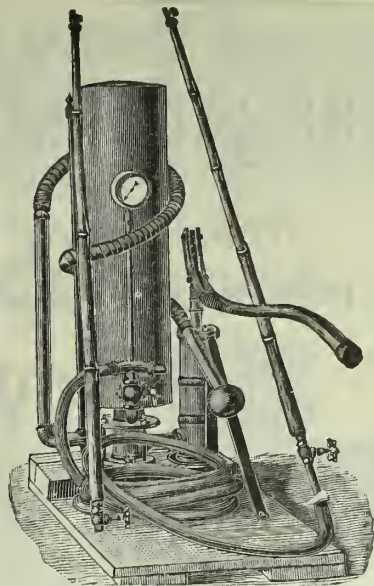
Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

STEERING MECHANISM FOR VESSELS.—J. Christensen, San Francisco, Cal. No. 641,192. Dated Jan. 9, 1900. The object of this invention is to provide an improvement in that class of apparatus which is designed to steer vessels by other than manual power, and in conjunction therewith he employs a liquid brake or check mechanism. The invention consists of a cylinder having a piston movable therein, a piston rod extending through both ends of the cylinder, means for supplying a fluid pressure upon either side of the piston whereby it may be moved within the cylinder, tiller ropes or chains connecting with opposite ends of said piston rod leading to the tiller of the rudder and balance cylinders interposed between the power cylinders and the rudder.

SAFETY ATTACHMENT FOR HOISTING HATCHWAY.—T. H. Oxman, Los Angeles, Cal. No. 641,145. Dated Jan. 9, 1900. The object of this invention is to prevent dangerous and fatal accidents which occur in operating hoisting machinery by reason of the cage being carried up beyond its proper stopping place and into contact with the sheaves or other part whereby breakages are caused. This device consists of a wheel journaled in the shaft at right angles to the path of movement of the cage having a peripheral stop disposed in the path of the cage, a motor having a valve controlling the hoisting mechanism, and a rod or connection having one portion attached to the valve and another portion eccentrically and directly connected with the wheel so that the axial movement of the latter imparts an endwise pushing movement to the rod or connection, thus closes the valve or throws the motor out of action before the cage has reached the danger point.

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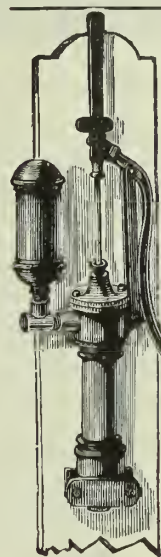
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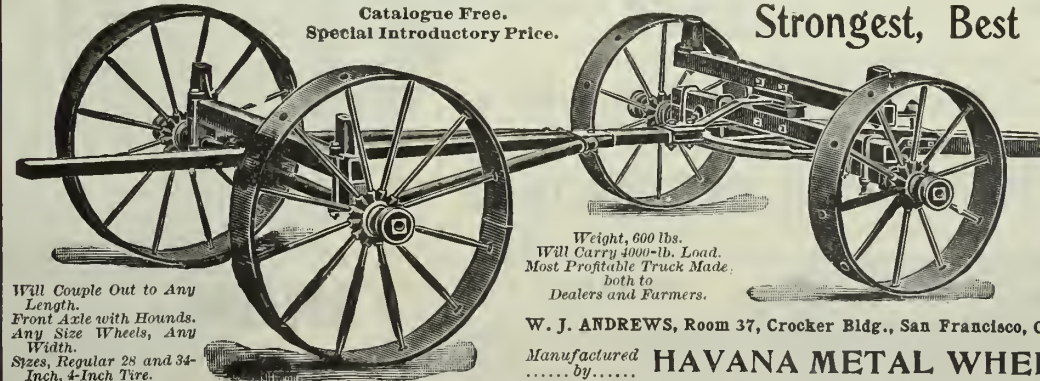
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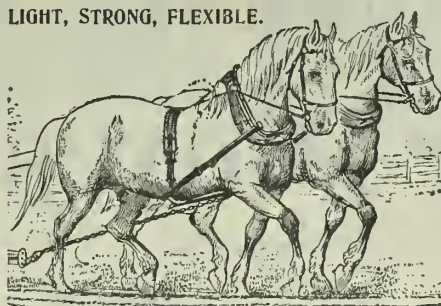
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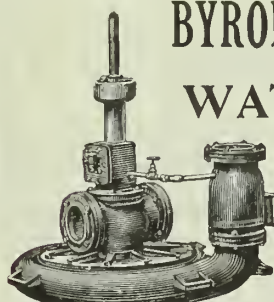
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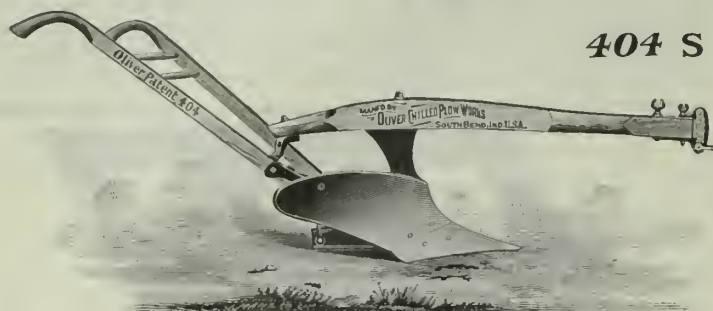
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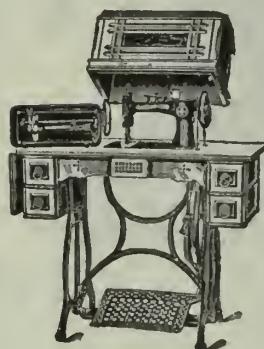
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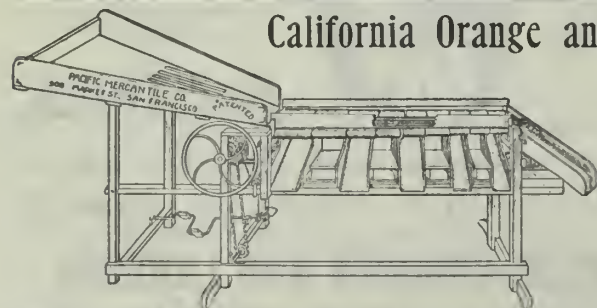
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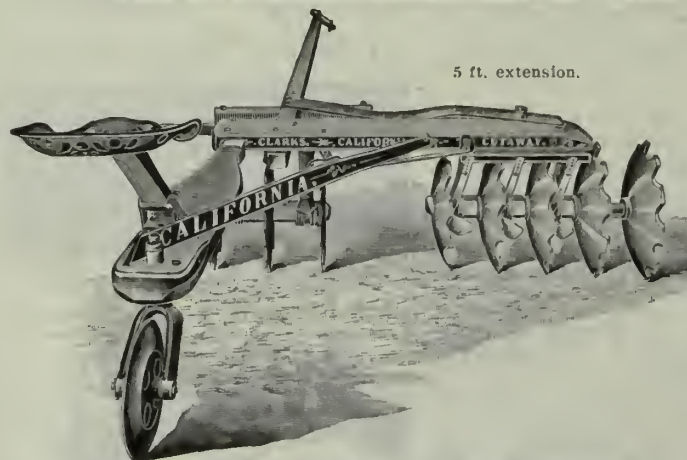
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 5.

SAN FRANCISCO, SATURDAY, FEBRUARY 3, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.



A Nevada Irrigation Reservoir.

ing center for Pacific ports, as she should. The engravings on this page are chosen to combat the too prevalent impression that Nevada is a limitless stretch of sand and sagebrush. This impression would fade away if one should visit the rich meadows and pastures and see the sleek stock of all kinds, or could measure the immense field crops which the light, warm soil yields at the touch of irrigation. Considerable attention has been paid to stock raising, dating from quite an early day, and it may certainly be said that as good horses can be found in Nevada as in any State in the Union. More than one world-beater has been turned out from the farms of Theodore Winters, Evan Williams and others. The finest kind of beef comes in off the ranges, and the mutton is second to none. The fact that the greatest Hereford herd of the Pacific coast, that of John Sparks, is domiciled at Reno, is significant of the position which Nevada can take at the call of enterprising men.

Very interesting statements are made concerning the natural pasturage of Nevada. The mountains and hills are covered with nutritious bunch grass, while on the valleys and benches grows the coarser and stronger rye grass, the seeds of which are as good for feed as grain. Beef, fattened on the bunch grass in the mountains in the summer, are brought down to the rye grass lands in the fall, where they eat the tops of the grass as eagerly and with as good result as though it were corn or oats. A couple of weeks on this food hardens the flesh so that they are shipped to San Francisco, Chicago and even New York with very little loss in weight or quality of the meat. In valleys and on bench lands are found, in addition

Nevada Ranges and Pastures.

Continuing comment upon our live stock resources and possibilities of much greater development thereof, a few words about Nevada are pertinent. Our sister State on the east is profiting greatly by our present lack of meat supplies and thus finds almost a home market in California for the sheep and cattle which otherwise would be forced to see eastern outlets. Nevada, too, stands ready to largely extend her production if California becomes a large packing and export-

tion to the native grasses, a number of different kinds of forage plants, called "browse," and having peculiar characteristics, seemingly provided by nature

to fit them for winter feed in this country. During the warm seasons, when stock can go into the mountains and live on the grasses there, these plants are bitter and no animal will touch them.

With the coming of the first frosts and snow, their leaves and stems become sweet and nutritious, and remain so until the warm weather and the grasses come again. In many of the valleys it grows thickly, covering thousands of acres.

An interesting combination of range and farm methods is also practised. In summer time thousands of horses, cattle and sheep find pasturage in the valleys and on the hills of western Nevada, and at this time of the year beef and mutton grow fat on the range. Late in the fall beef cattle and sheep are driven to the farming districts, where they are fed on alfalfa and grass hay—mainly of the former—of which great quantities are raised, for the winter and early spring market. Thousands of head of cattle and sheep are fed in the valleys of the Truckee and its tributaries each winter.

Our engravings show one of the valley pastures of Nevada, with its ample water supply traversing it; also an irrigation reservoir and the view of the dam which retains its waters for industrial uses. Recent writers forcibly present the fact that there is but a small fringe on the northern and another

along the southern edge of the State that contribute water to the sea. All the rest of Nevada lies in a basin, from which the rainfall returns in vapor to the skies from which it came. The Humboldt river rises in the Pequoops, which divide Utah from Nevada by a natural cut-off. It drains the whole northeastern portion of the State, carrying a big stream 300 miles to a wide basin west of Lovelock, where it spreads out into a lake ten by twenty miles and evaporates. The Truckee, Carson and Walker rise in the Sierras and run east to separate lakes and evaporate.

A Nevada Valley Scene — A Wide, Well-Watered Pasture, With Its Tenantry of Fine Stock.



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E. J. WICKSON.....Horticultural Editor.

San Francisco, February 3, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—A Nevada Irrigation Reservoir; A Nevada Valley Scene—A Wide, Well-Watered Pasture, with its Tenantry of Fine Stock; Irrigation Dam in Nevada, 65.
EDITORIAL.—Nevada Ranges and Pastures, 65. The Week; The Formation of Fruit Buds; California Cured Fruit Association; The Weather Bureau, 66.
QUERIES AND REPLIES.—Young Trees Among Old Ones; Grafting Apricots; Salt Bushes for Poultry; Lecanium Scales; Inoculated Soil for Legumes; The Best Popcorn, 67.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending January 29, 1900, 67.
THE IRRIGATOR.—Pumping Water for Irrigating, 68.
THE VINEYARD.—Resistant Vines; Early Grapes for Wine, 69.
THE POULTRY YARD.—Timely Hints, 69.
THE VETERINARIAN.—Answers by Dr. Creely—Malignant Swellings; Skin Disease of the Cow, 69.
AGRICULTURAL REVIEW.—70.
HORTICULTURE.—Failure of Olive Crop in Southern Europe, 71.
THE HOME CIRCLE.—The Seven Ages of Man; A Honeymoon with Three Bears; "Afternoon Tea," 72. A Woman in the Speaker's Chair; The Secret of Feminine Charm; Women's Wrongs, 73.
THE MARKETS.—Produce Market; Fruit Markets, 71-75.
PATRONS OF HUSBANDRY.—Grass Valley Grange; Action by the State Grange; San Jose Grange; Temescal Grange, 78.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 76. Sacramento Valley Circuit, 78.

The Week.

Out-door affairs are practically unchanged, and though each person could probably improve the weather if he had the making of it, there is no great cause for complaint, except in districts where the total rainfall is still too low to assure the season's outlook. January was exceptionally dry, and thus leaves some regions still anxious, though we hear no lack of confidence in the season, for there is still time to bring the whole State to the line of large crop expectations, where the greater part of it already stands.

The Legislature is trying to get into line for the choice of a Senator next week, but so far the outlook is clouded. The popular wish certainly is that the business be dispatched and that the expense of a legislative session be cut to the least figure.

Wheat has undergone some fluctuations during the week, but closes in a little better shape than it has assumed in the interval since our last report. Freights are higher and ships few, which has a tendency to offset outside conditions, which favor an advance. Barley is still going to Europe in considerable quantities, but has pursued an uneven course during the week, and is now back to its starting point. Hay has declined farther, and the market is heavy under large receipts. Millstuffs are in light supply and the demand good. Beef is unchanged and veal is lower; mutton is steady under light receipts; hogs keep up well, but are a shade easier. Butter is firm and a little higher, for receipts of choice are light and there is some competition to secure them; there is a fair shipping demand. Cheese is weak and shading off. Eggs are a little lower. Choice young poultry is still higher, being in special request for China New Year. Eastern poultry is still arriving, but in more moderate amounts. Dried fruits are quiet and little doing, but it is counted that a fair spring trade will clean up everything. Apples are unchanged, with fancy stock in light supply. Oranges are weak in the face of large supplies. Limes are scarce and high. White beans have made another advance under sharp eastern demand. Potatoes and onions are unchanged. Wool is slow; there is little to be had in the grease, and scoured wool is going out. Future value is being talked down because of the Argentine treaty proposition. Foreign wool markets are in good shape.

COLORADO sugar factories are having some trouble with beet-growing farmers, something like that which has been experienced in California. The Colorado sugar men have found that the native Westerner is not a natural beet grower.

The Formation of Fruit Buds.

Recent careful investigation has shown that formation of fruit buds begins much sooner than is usually thought. The popular conception of the matter probably is that the fruit buds are formed after the heavy work of each growing season is over—that is, that after the current crop is ripened, the tree undertakes preparation for the following year. This has been shown to be wrong by the studies of Prof. E. S. Goff of the Wisconsin Agricultural Experiment Station, of which an outline is published in the last station report. The fact is that in Wisconsin the characteristic internal formation of the bud which is destined to produce bloom can be recognized by proper manipulation for the microscope rather early in the growing season. He was able to distinguish the bloom bud of the cherry on July 11th; of the plum on July 8th; of the apple on June 30th; of the pear on July 21st. These were, of course, buds which would bloom the following year. It does not appear from the publication at what date the growth for the current season began, consequently we can not find the proximate equivalent for these dates in California; but, according to our memory of Eastern conditions, the fruit bloom would be in order about the 1st of May. Comparing this with California, the equivalent date would be from four to six weeks earlier, and we might find the differentiation of bloom buds to be discernible, with proper appliances in California, during the months of April and May—possibly the former with early-starting varieties of fruits.

It does not appear that there is any fixed relation between the first possible recognition of a bloom-bud and the ripening of the fruit upon the same tree. Prof. Goff shows that with the apple, pear and plum the bloom was discerned several weeks before the fruit ripened, while with the cherry the ripening nearly coincided with the first recognition of the character of the bloom-bud. It will be important to conduct a series of close examinations for California dates in this line, and we presume some of the advanced students in the University may undertake it this spring. Enough is known, however, to give emphasis, and special point also, to what we have learned already by orchard practise as to the effects of rational management upon the regular bearing of satisfactory fruit.

In the first place it gives additional force to the claim that a fruit tree should never be allowed to undergo distress of any kind if its greatest productiveness and value are to be attained. Hardship may not be so quickly fatal to a plant as to an animal, but to throw either out of service profitable to the owner there may be little difference either in time or degree. At no time should a fruit tree suffer for lack of moisture or plant food, and it is dangerous to think that the owners' convenience may be the guide rather than the needs of the tree.

The fact that the fruit buds begin formation while the fruit is still maturing shows more clearly how necessary that the treatment of the tree during the growing season should be the best possible. It gives a new force and reason to the practise of thinning fruit and guarding against excess of bearing wood in the tree. To allow the tree to bear too great a burden during the summer, and trust to minister to its needs and brace it up by irrigation after fruit harvest, may bring help too late to be of advantage to the tree. It is possible that the bud which starts special development weakly while the tree may be overburdened, may be weak afterwards, in spite of better care and provision. The injunction is clear, then, that water may be required while the fruit is growing, not alone for the fruit, but for the next year's buds.

On the other hand, the early beginning of the fruit buds does not militate at all against what has been learned by local observation and practise with reference to the value of maintaining thrifty leaf action after the fruit is harvested. It is then that the fruit bud makes its later development, and if it should fail then of sustenance it would be weak and ineffective, and unable to discharge its final functions in the next season's fruiting. The more we learn about the habits and requirements of the tree the more clearly appears the need of constant care and generous provision on the part of the owner, and the more sure the conclusion that in these acts lies the secret of profitability and success.

The Weather Bureau.

Californians are deeply appreciative of the work of the Weather Bureau. Most valuable work has been done in the industrial interest, and the attitude of the Bureau, through the ability and acceptability of the men who have labored here as section directors, has created an earnest good-will and appreciation for the service in general. Our readers will be interested, therefore, to know that there is now pending before Congress a bill which, it is thought, will tend to perpetuate the good character of the service and promote its efficiency. At present promotions are not properly regulated, and there is no relief for old and disabled servants. The proposed measure introduces the merit system in all branches and provides that the appointments shall be by nomination by a Representative of the people after examination by the Civil Service. It prohibits the use of political or other influence to secure promotion or assignment. It places each employe on his merits and prohibits the removal of an employe for political reasons and makes his tenure of office good so long as his services are advantageous to the government. Without one cent of expense to the government, it provides for the retirement of disabled and aged officials by means of a fund to be known as the Weather Bureau Retirement Fund, which is established by a pro rata assessment each month on the present salaries of members of the service. These provisions seem clearly to be in the interest of permanence and efficiency among the workers of the service, and our agricultural associations will do well to help along the matter by communicating their views to their Representatives at Washington. This course seems all the more desirable from the fact that Congress has taken rather a hostile attitude to the bill. Congress is rather apt to pounce upon propositions which seem calculated to give tenure in the public service because they do not always take time enough to understand the nature of the service. Certainly to understand our obscure weather phenomena and the relation of climatology to crop production requires long preparation and experience, and to throw out good men just when they become educated up to a point of doing good work is very poor public policy. We trust Congress will look into the matter more closely than they seem inclined to do at present.

California Cured Fruit Association.

The above is the new name of the organization which was effected in San Jose two weeks ago for the handling of cured fruits and nuts, as has been fully described in our columns. The insertion of the word "cured" was made by the directors to escape conflict with the ghost of an earlier organization which had pre-empted the name first chosen for the new organization. The new word is, however, a valuable addition because it more clearly defines the field of the new effort and because it emphasizes the fact that our products are really systematically cured and not simply dried as fruit was dried in the old time. The new organization is now opened for business and for the propaganda which is at hand. We have just received some well-prepared descriptive literature issued by the directors descriptive of the methods to be pursued, the by-laws of the association which has been formed and the contract to be signed by the grower. The essential features of the organization seem to be as follows:

Each member has an equal vote in all meetings of the Association. No liability can be incurred without the approval of a majority of the members of the Association, and no member is liable for any greater sum for such indebtedness than the proportion of one to the whole number of members; that is to say, if \$10,000 indebtedness is incurred, and there are 5000 members, no member will be liable for a greater sum than \$2, which would be his proportionate share. The Association will not attempt to transact any business in the way of handling fruit, unless the product of 75% of the prune acreage in bearing in the State is secured on or before the first of April. The Association, in case it should secure the requisite acreage of prunes, will also handle any other cured deciduous fruits and nuts; but that, unless it was insured 75% of the products of such classes of fruit, respectively, it would not attempt to make and maintain stable prices therefor, but would market the same at the best attainable prices. The Association undertakes to receive, grade, inspect, pack and sell the products committed to its charge under the terms of the contract, that will specify in detail the method proposed for the conduct of the business of the Association, and the terms upon which the grower will contract for the delivery of his fruit. The contract contemplates the delivery by the grower of all the prunes raised by, or for

him, or in which he may have an interest, if under his control, which shall be cured. If the grower desires to sell his prunes green, he will be entitled to do so to any member of the Association who may wish to purchase them for drying, or to any packer doing business with the Association, but not to any person not a member of the Association. He will be permitted to ship any green prunes, for consumption green, either inside or outside of the State. He is entitled also to sell, either for shipment or to canners, his peaches, apricots, plums and other deciduous fruits, provided that he delivers to the Association any proportion of said fruits that he may cure.

The management expects to make a satisfactory arrangement with the packers and fruit associations to prepare under its inspection for market the year's crop, and through their agency to sell the same.

Whenever any grower shall have delivered all or any portion of his cured fruit, he can borrow money of any bank or individual and give a check or order upon the Association for the amount, which the management will accept, payable out of the first proceeds due such party from the sale of his fruit. This will insure to every grower all the credit that the value of his crop would entitle him to.

This is, in brief, the plan of the organization and it seems wise and conservative and capable of realization. We trust all our readers interested in these lines will give most careful attention to the project as it may be further presented to them by the directors of the Association and be disposed to give the effort such support and co-operation as are essential to its success. No matter how good the plan might be, success depends upon the attitude of the individual growers and no one should allow either indifference or prejudice to repress conviction.

QUERIES AND REPLIES.

Young Trees Among Old Ones.

TO THE EDITOR:—My manager tells me it is difficult to get new trees to do well here and there in an old peach orchard, and yet I have a good many peach trees which do not yield good varieties. Is there anything to put in the holes which will help the young trees?—MRS. M. C. T., Los Angeles.

Your manager is right. It is a very difficult thing to get young trees to do well in places from which old trees have been removed. The top working of the soil, or, if the expense were not too great, excavating hills and bringing in fresh soil, coupled with the use of a certain amount of well-rotted manure, mixed in the soil where the roots would not immediately come into contact with it, are ways by which young trees can be helped in such trying situations, but the old trees will soon send roots into the nice places you make for the young ones. If your trees are thrifty they can be readily worked over into varieties which you desire, and this is a much easier undertaking. If the peach trees are cut back into the larger branches and the ends painted over to prevent cracking of the wood, there will be forced out very vigorous growth of shoots, of which selected ones can be budded with desirable varieties during the coming summer. This is a good way to get a good variety in the place of an unsatisfactory one. It is also found feasible to graft the peach tree by using a side graft and not splitting the wood of the top, as is the common method with other trees. If the grafting and waxing are well done, the results are very satisfactory. The best time to cut back the trees, either for forcing out growth to bud into or for inserting grafts, is late in the dormant season, or about the time when the buds are swelling. Our publication, "California Fruits," treats of all these matters more in detail.

Grafting Apricots.

TO THE EDITOR:—I would like to work over six-year-old Moorpark apricots into Royal. Is it better to graft or to bud? Is it more dangerous to graft in a season likely to be dry than when there has been more rain?—READER, Simi, Ventura county.

It is perfectly practicable to graft Moorpark apricot trees into Royal apricots. It is much better to graft than to bud. It is good practise to cut back the tree at this time of the year, and then about the time when the blossoms are appearing on other trees cut back the stems a little further and then insert the scion. This seems to work better in some cases than to wait, cut back the tree and put in the scion at the same time. The scions to be used should also be taken off now and put in a moist, cool place, so that they will be perfectly dormant when they are used. Wax well both the stump and the top end of the scion, and then cover the whole of the trunk and branches with a good coat of whitewash, to pre-

vent sunburn. If this is not done many stumps are seriously injured by the sun before the scions make growth enough to shade them. If your trees are headed low enough it is better to graft into the smaller branches all around than to graft into the main stem, because these smaller cuts heal over more quickly. There will be no objection in grafting in a dry year, because there is sure to be enough strength in the tree to push the graft sufficiently for the first year; in fact, a tree cut back and grafted over is better fitted to stand a dry year than one which is allowed to carry a full amount of branches and foliage.

Salt Bushes for Poultry.

TO THE EDITOR:—Can I grow salt bushes and use the seed for poultry? I want something to grow on dry places, where alfalfa does not do well. Also, is the salt bush bloom good for bee forage?—K. C. B., Reedley.

We do not apprehend that any of the salt bushes will yield seed of great account for poultry feeding, although the seed is freely produced and is largely eaten by fowls. The seed is very small and probably has very slight nutritive value. The salt bush will give green feed for poultry on the dry places; but, if you want a seed-bearing plant, it would be better to plant Egyptian or Kafir corn, or some other plant of that class, for summer growth. If you want a hardy grain to grow in the winter with a scant amount of moisture, probably common rye would best serve your purpose. We have not had opportunity to observe the attitude of bees toward the salt bushes. The bloom is very small and inconspicuous. Who can tell whether the bees do anything with it or not?

Lecanium Scales.

TO THE EDITOR:—I send a sample of scale that I found on my lemon trees. I would like you to tell me if it is harmful or not. I sprayed with the rosin wash for black scale, but it did not seem to kill this insect.—SUBSCRIBER, Santa Paula.

The scales on the leaves are the young of the black scale or, possibly, of the flat orange scale, for the two are difficult to distinguish when very small. These scales hatched from eggs which were not killed by your spray, for it is next to impossible to kill all. The only way is to spray again and at intervals hereafter, or employ the fumigation method, which seems to be more thorough in its work and is now used instead of spraying in the leading citrus regions of the south.

Inoculated Soil for Legumes.

TO THE EDITOR:—Is the University-distributed inoculated soil, with the seed of the hairy vetch, so that the right kind of bacteria can be assured?—B. C. A., Lake county.

This work has not yet been undertaken. The need of introduced bacteria has not yet appeared, for the plant seems to do its work excellently with the home supply of organisms in our soils. How far such systematic introductions are needed anywhere is not yet fully demonstrated, and experiments are still in progress with different investigators.

The Best Popcorn.

TO THE EDITOR:—What variety of popcorn will be most profitable to grow in Tulare county?—N. W. M., Orosi.

This is a local question. Will some Tulare reader answer?

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, January 31, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rain-fall to Date.....	Total Seasonal Rain-fall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Minimum Temperature for the Week.....	Maximum Temperature for the Week.....
Eureka.....	.34	33.80	17.68	23.93	40	60
Red Bluff.....	.10	14.89	13.12	14.81	32	64
Sacramento.....	.04	13.57	7.85	11.32	40	56
San Francisco.....	.19	14.47	7.87	13.51	44	56
Fresno.....	.00	6.12	3.84	5.05	42	50
Independence.....	.00	2.08	1.15	4.35	30	64
San Luis Obispo.....	.00	12.41	6.87	11.67	40	72
Los Angeles.....	T	4.57	2.94	9.22	44	72
San Diego.....	.02	2.82	3.43	5.14	50	64
Yuma.....	.00	0.66	1.33	2.07	38	78

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 29, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

With the exception of a few sprinkles of rain on Thursday along the southern coast of California, and moderate showers in the northern portion of the State on Sunday, the week was unusually dry for this period of the year. As in the preceding weeks, however, fog prevailed to such an extent that the soil lost but little of its moisture. The season as a whole has been unusually foggy and cloudy. In some portions of the San Joaquin valley there have been but two or three days of bright sunshine in nearly six weeks. This tule fog has prevailed generally in the valleys of northern California. There has also been more cloudiness and fog than usual south of the Tehachapi. There have been no drying winds, and there appears to be no apprehension of insufficient rainfall. Two heavy frosts occurred in the northern part of the State, and some almonds in bloom were injured. The foggy and rather cool weather which has prevailed is holding back premature budding. Farming operations have progressed more during the past week than for several weeks preceding. The normal rainfall for the Sacramento valley at this time of the year varies from three-quarters to one inch; the total rainfall for the week averages in general about one-third of an inch. The absence of rain for the greater portion of the week allowed the farmers of the river lands a few days of working weather. The absence of rain was also beneficial in permitting the rivers to fall from their high stages; from a stage of 27 feet on January 9th, the river at Sacramento is now down to 22³/₁₀ feet. In all probability much of the early snowfall has been melted.

Grain is making good growth generally throughout the State. Feed is reported as excellent. Fruit buds are swelling, and almonds are in bloom. Plowing continues for both seeding and summer-fallow. In the far south a little more rain would be welcome, showers on Thursday and Friday being very light.

SACRAMENTO VALLEY.

The precipitation was far below the normal, not more than one-third of the normal rainfall having fallen. The nights and mornings have been almost incessantly foggy. The absence of rain for the greater portion of the week permitted more work, especially in the lowlands, than for sometime past. While the ground has not lost much of its moisture, owing to the fogs, it is more workable. Orchard pruning is going on extensively, and there has been some plowing and seeding during the week. Range feed never was better, and sheep and cattle are in prime condition. In the citrus belt of the valley, trees have made good growth, and there has been much planting of citrus trees. Two heavy frosts occurred during the week, and in the northern end of the valley almond blooms are reported to have been injured, but fruit buds generally are not in a condition to be hurt unless extreme and unlooked for conditions prevail. Near Oroville reports continue of insufficient snow supply in the mountains. Farmers expect heavy crops of fruit and grain.

COAST AND BAY SECTIONS.

Only a moderate amount of rain has fallen, and this chiefly on Sunday afternoon. Foggy, cloudy weather prevailed almost without interruption. The ground is in excellent condition, and the weather has been very favorable for a steady and healthy growth of nearly all vegetation. Farm work is progressing rapidly, and plowing, seeding and pruning are going on generally. In some places plowing and seeding are about finished. Tree and grain planting continue under favorable conditions. In the sugar beet section, harvest is reported as finished, some beets lost in the lowlands, but only a small percentage of the crop. Feed and early sown grain are making good growth. Almond trees are in bloom, and prune trees are very heavily set with buds. Pasturage is in excellent condition, and stock are fat and well fed.

SAN JOAQUIN VALLEY.

The rainfall has been far below the normal, and a little rain, followed by bright sunshine, would be very acceptable. The tule fog has prevailed for nearly seven weeks, and in portions of the valley there have been but two or three clear days during this time. The normal rainfall for Fresno is .28 of an inch for the week, and rain is needed, as well as sunshine. In the lowlands, on account of ground, plowing and seeding have been somewhat delayed, but on the uplands plowing and seeding have been carried on extensively. Grain and feed are growing nicely, although there are a few reports of danger from rust if the damp weather continues. The acreage sown to wheat is reported to be fully equal to that of last year in many vineyards and orchards.

SOUTHERN CALIFORNIA.

The weather during the week has continued generally warm, and favorable for crops of all kinds. Heavy fogs in some places have been beneficial, and light showers on Thursday and Friday were of considerable benefit to grain and pasturage. Grain is still holding out well, well thought needing rain in some sections very soon. In the vicinity of San Diego preparations are being made for the extensive irrigation of lemon and orange groves. Early sown grain is up and looking bright. Prospects for large crops are still very good. Pasturage continues good, though in some places needing rain. The Duarte orange crop is said to be much larger than last season's, and generally of superior quality; picking and shipping are progressing rapidly.

THE IRRIGATOR.

Pumping Water for Irrigating.

By C. G. BAI DWIN, Claremont, Cal., at the Farmers' Club Convention at Pasadena.

Pumping water for irrigation is not new. India has long irrigated almost as many acres from pumped wells as from the great canals built by the English government. It is but a step from flowing wells, with which we have long been familiar, to wells which must be assisted by the pump.

HISTORICAL.—Southern California did little with pumps prior to 1898. Some large work was projected earlier. In August, 1897, a movement looking toward pumping for 25,000 acres or more in the vicinity of San Jacinto, Lakeview, Perris and Elsinore was begun. While less than 50 H. P. was then being used on wells in all that region, there is not less than 350, and the proposed company transmitting their power from Mill creek, a distance of thirty miles, will find immediate sale for over 600 H. P., and will confine their work to a radius of about ten miles around Perris, leaving out San Jacinto and Elsinore. Much more power than they will be able to develop will be called for in the San Jacinto valley. The Chase Nursery Co., purchasing over 1000 acres near Perris, have already contracted for a steam electric plant of some 300 H. P., to be used for various purposes, but primarily to distribute power to a dozen or more wells scattered over the tract supplying water for alfalfa.

Such large plants will be very common. The Kern County Land Co. of Bakersfield was the pioneer in actual use of electric pumps upon a large scale, though not the first electric company to make some use of such power for pumping water. I believe the pioneer electric pumping plant for irrigation was at Pomona, in connection with the San Antonio Light & Power Co., the company which led the world by two years in the commercial use of high voltage and long-distance transmission. Ten thousand volts and a thirty-mile pole line was a great leap from earlier practise. The pumping industry now opens up so largely that it appears plain that all available water power in southern California, including the Kern river, brought in from 125 miles distance, can be permanently utilized in this single industry. The water powers are not numerous or large in dry seasons. It is equally plain that all our oil will be used in our industries. Every acre of land capable of intense culture will be needed to supply the open and opening markets, and for vast areas pumped water will be the only water available.

RESERVOIRS.—Reservoirs above ground with large drainage areas are not numerous in the region of the San Gabriel, the San Bernardino or the San Jacinto mountains. But reservoirs of remarkable areas and of great depths and deeply covered to prevent evaporation, and with hundreds of miles of watershed behind them, underlie the most fertile valleys of southern California. The water stored in the mountains should be reserved for the lands lying too high to be economically reached by pumping. There is enough such land to call for all such water we have. Bear Valley reservoir in the mountains has but forty-five miles of watershed and three miles of area, while the great reservoir under San Bernardino valley has not less than ten times that watershed and is at least 140 miles in area, and so far as sounded is more than 1000 feet deep. The vast resources of Riverside irrigation waters—the best we have—flow out of this reservoir. What vast supplies for lower lands flow out below we do not know. Bear Valley reservoir was dry in July, 1899, and is still empty, while the San Bernardino basin is overflowing through artesian wells which are the wonder of the world.

With such underground reservoirs the average drainage of the vast mountain areas can be depended upon, and they are adequate for all uses. As another example, the San Jacinto basin, with an area equal to that of San Bernardino, has dropped during the last six years of unprecedented drouth but about 1 foot a year in its water level, though being pumped to over 1000 inches this year. And the San Fernando valley has likewise shown most remarkable resources, justifying the greatest confidence in its permanence. These are the three great basins in connection with these mountains. In many other places we have seepage from these basins, and these may be as permanent as the basins themselves.

The areas along the San Gabriel foothills have developed many good wells, but nearly all of these, like foothill tunnels, show signs of failure. Such wells near Pomona, which a few years ago flowed 200 miners' inches, are now being pumped down 55 feet and yield only half as much water. These wells show also the fatal sign of shallow supply in that they rise promptly after rains. These have been and will be of great use in an occasional dry year to supplement free flowing streams, but if depended upon for a series of years for steady irrigation they must fail. There is no indication that any of the sources of water spoken of are fed from more distant drainage areas.

Wells in and along the underground outlets of the great basin of San Bernardino and San Jacinto have

a most hopeful outlook as permanent sources of water supply for all lands to which they can be economically raised. These waters should be guarded for the areas immediately adjoining and not run off to distant regions for use upon new lands. Owners with growing orchards needing to be saved should not be too harshly blamed for seeking distant supplies which may affect those nearer. Speculators, however, who propose to pump water to run off long distances to cover raw lands should be resisted by all lawful means. Underground reservoirs are as valuable as mines, and a spirit of loyalty to one's neighborhood should guard against their depletion.

PUMPING.—Having the water, we now come to the question of getting it to the top of the ground and lifting it to higher levels economically. I have examined many pumping plants and have reports from many more, and from these reports and examinations I come to some conclusions.

Water can be raised from a sump hole or reservoir at surface of ground to higher levels and delivered at a single level most economically on account of style of pump and connections with motor. One cent will in good practise raise a miners' inch of water—12,960 gallons—6 to 7 feet in twenty-four hours, using pumps of moderate cost and combining distillate at about 13 cents per gallon and oil \$1.50 per barrel. If delivered at various different levels with the same power unit, 1 cent for 5 feet is good practise, and will be less or more according to conditions. This is fuel cost only.

In raising water out of wells we have two distinct classes. First, deep wells, where it is impracticable to sink a shaft to the water. Within the reach of the ordinary farmers these deep-well pumps will afford 20 to 30 inches at about 1 cent for 6 feet of lift. The great sources of loss in these wells are found in cheap pumps and gas engines, which break down and entail great loss of crop from failure to deliver the water when most needed. The best is none too good, and great care should be used in selecting the pumps and gas engines. With oil at \$1.50 per barrel, almost as good results can be obtained except for cost of attendance. It is true that gas engines require the time of a man, but a cheap man can attend an engine twenty-four hours, while a steam engine requires not less than two men, and one at least an unusually good man, and the cost of attendance will be more than double. Small plants cannot pay these wages, and it pays to use gasoline engines, but they must be good ones.

Where the wells are not too deep and will yield a large amount of water, the best plan is to put down a curb to the water and put in a vertical centrifugal pump. Such an outfit will furnish any quantity of water up to the capacity of the well at 1 cent per miners' inch for 5 feet of lift, at above prices for fuel.

Under some circumstances it will pay to set a rotary pump, a steam pump or a large reciprocating pump in the bottom of the pit where it is desired to deliver the water to different points much higher than the surface of the ground. Such pumps have a higher efficiency and being positive displacement pumps admit of greater variation of head than the centrifugal. Great wisdom should be used in the selection of rotary pumps to receive good wearing properties.

In the large majority of wells the water gradually falls below suction. In such cases the pit must be deepened and the pump lowered. One of the best devices for this consists of a "stirrup" to hold the vertical centrifugal pump. This is thus freely suspended from the top of the well and can be lowered while at work. In thus lowering the shaft the best device I have noticed for preventing loss of suction, through too rapid pumping, consists of a pipe connected with the delivery pipe just above the pump and turn-down into the well. With such valve you can regulate the amount of water flowing back into the well to keep the water up to suction. Such a device is often useful to secure automatic action. Those who have suffered loss of time from loss of suction will appreciate so simple a device.

One of the common conditions is a group of wells each yielding a small amount of water. These can be connected together, if not too far apart; but if there is a general fall in water level, making it necessary to lower the pump to keep it within suction limit, it is an expensive matter to lower these connections. It is not a very serious matter if these wells are within a radius of 30 feet. Often the only reason for a nest of wells is that the sand is so fine that it gives up its water slowly. If you take the sand and gravel, coarse enough to go through a twenty-mesh screen, water will go through it so freely that you can pump 100 miners' inches or more out of a 7-inch casing. In the same water area where the strata are unquestionably all connected, you may yet strike sand so fine that much of it will go through an eighty-mesh screen. You take a quart can of this material dry and you can pour into it almost as much water as into the coarse gravel, but you can turn the glass over and not a drop will run out.

Where you have fine sand and yet are sure that the water is present in large quantities, large wells should be put down, close together, and the group connected to one well, using a deep pit, and tunnels to the side wells.

In many cases the wells are necessarily scattered a half mile apart; no one well yields much water; and the general water level lowers rapidly from month to

month. Such an area is not a valuable permanent supply, but may be worth very much in a dry year. A central compressed air plant may work here with greater economy than any other plant. Never use compressed air on a single well. There is no question it is highly efficient, but in such a case as the above it would be most economical, all things considered. Where the wells are scattered over a large area for the purpose of saving conduits and to deliver good irrigating heads at convenient distances, and where the area calls for constant pumping, I think the plan adopted by the Chase Nursery Company near Perris is the most economical: a central steam plant with high-class machinery, economical of fuel and requiring high-class labor to operate it, electric generators, vertical centrifugal pumps in "stirrups" at each well, with an electric motor directly connected to shaft without belt or gearing. One man and his assistant with a boy helper can operate such a plant and furnish a dozen heads of 100 inches each, as may be demanded.

A large amount lifted to a high level will justify compressed steam pumps. These will attain high efficiencies—300 feet for 33 cents for fuel at \$1.50 per barrel of oil.

SUGGESTIONS.—A brief paper of this kind can only be suggestive, not exhaustive. Let me close with some suggestions more or less elaborate:

Never put in a cheap plant.

Never be in a hurry to put in a plant.

Look up your dealers' records. Do not suppose that the man who publicly refers by name to men who have his plants needs no investigation. Oftentimes the man who talks most confidently of the perfect satisfaction his plants have given to your neighbors has made a record black with failure, and all the men to whom he refers with such apparent confidence are wholly dissatisfied and would not deal with him again and are even now at law with him to force him to take his plant out. This is experience in southern California, not a fancy sketch.

Don't do any experimenting at your own expense. A good firm will make a hard and fast contract, assuming the risks. Have it examined by your lawyer. The \$25 paid for that advice in execution of the contract will be the best money you ever spent.

Deal with good firms. Pay good prices for what you know to be good rather than try to do better with firms of less experience and no reputation.

A man with an excellent well, water within 30 feet of surface, and abundant enough to afford 100 inches, with a fall of only 7 feet, took advice of an unknown firm, put in an air plant at a cost of \$800, besides his boilers, etc., and it was so poorly made as to be absolutely worthless to take out. I know expensive plants to have been thrown out after a single season's use, bought by honest men from honest men, but inexperienced. Some gasoline engines, new and untried, but very attractive in appearance, drop to pieces in a season, while others are known to do as good work as ever after five years use. The difference in cost is slight. The difference in efficiency and wear astonishingly great. You must remember that in the inexperienced business house you fall into the hands of a salesman who often knows no more than yourself. He is there to sell. He is honest, but he does not know.

MISTAKES.—It is wonderfully easy to make a mistake. The chances are twenty to one that you will not do the best you could. Make careful inquiry for successful plants. Learn all about them. How far they raise the water. Look up size of suction and discharge pipes. Don't waste \$5 per day against a needless friction head. That would pay interest on \$10,000 of added investment. Measure water over a weir. Don't guess at it. Find just what fuel is used to raise 1 miners' inch 1 foot, and if you find cost of fuel more than 1 cent for 5 feet of lift per miners' inch for twenty-four hours, look further. Assume that you need not have any service but the best within reasonable limits, and those reasonable limits have very probably been already well established by the best practise within 100 miles of your own well. Look them up.

How to Proceed.—Perhaps the simplest plan would be to go to these good dealers; lay before each in writing the exact facts, viz: depth of well, level of water; drop when pumped for the amount of water you have found you need, and the well will yield. To this end you should in every case have your well tested. It will be the best \$100 you spent in the whole undertaking. No good dealer will take the risk of such an untested well, and you are obliged to do so—a very unsafe risk, often costing a man more than \$1000 to save \$50 or \$100, which would have made him secure.

Ask each dealer to prescribe the best plant he can furnish you for such conditions, and to refer you to one or more such installations. Then go to see them. Take all the time you need. You will gain enough valuable information to richly repay you. Take the statement of facts, your three presumptions and your observations of all of them to one of the best four consulting hydraulic engineers in southern California, and get his advice and aid in redrawing the plans, or in acceptance of one of the offers. Then have your lawyer draw the contract, throwing all construction responsibility upon the dealer.

Such a course is not a cheap method, but it is a

good one, almost sure to be successful, and the extra cost will not exceed \$100 for all the care and insurance against disappointment.

Beware of a junk heap. I can point you to piles of junk bought by honest men from honest men. They did not take precautions. You cannot be too careful.

One more caution. I know a community which has made up a purse and is now sinking a well. There is excellent promise of plenty of water at 200 feet depth; very little expectation that it will be nearer the surface. They will need to lift it 250 feet higher to cover the main orchards. They can get the well down for \$400 or less. But there is no portable well-testing machine to tell them whether they have much or little water. They want much. Therefore they must put down a large pump, suited to lift water to a high level. Such a plant will perhaps cost \$3000, and must be put into a pit 200 feet deep, costing not less than \$800. If the water is not there, the net loss will be not less than \$2000, and all their time. If the water is there, the lift of 450 feet will be found to be too high for profit. And so, under the best conditions, the end is disappointment and loss. The way to think is to think through to the end. Had this been done, the first step would not have been taken.

Think! Think thoroughly! The whole series of steps must be considered. Almost all failure comes from failure to foresee a single fact which proves to be the fatally important one.

THE VINEYARD.

Resistant Vines.

TO THE EDITOR:—In the issue of Jan. 20th I find two items on which I wish to make a few remarks, as I think I can throw some light on the subject. The first is the query, "Is the Tokay a resistant vine?" I can say emphatically that it is not, as a block of Tokays on the Simonton Ranch, when under my charge from 1881 to 1886, was entirely destroyed by the insect, with all the other Vinifera varieties surrounding it. As it is a strong grower, it may hold out a trifle longer, but can not be depended upon.

"Is the Louisiana a good resistant vine?" This is answered in the negative, to my great surprise. As I introduced the Louisiana here in 1882, and controlled the whole stock of it, so to say, until 1895, I ought to know something about its resistance. I cultivated it in a small way on the Simonton Ranch; and as it was a splendid grower and a very fair bearer of high quality fruit, making a fine wine, I grafted 100 strong Charbonneau with it rather deep in Chiles valley, my object being that the grafts should take root, and thus become resistant. They made an enormous growth, produced satisfactory crops with long pruning, and are healthy yet. As it roots more easily from cuttings than Lenoir, we planted it in the new vineyards ten years ago, and found it equally resistant with Lenoir and Herbe-mont. The Vinifera varieties surrounding the original grafts succumbed to the insect several years ago. So I think this a proof of its resistance, and fail to see how any one, with only the experience of a few years, since I began to distribute it, can bring satisfactory proof of its non-resistance.

WINE GRAPES FOR A LATE REGION.—Location makes a great difference, of course. Ours is rather a late region in Chiles valley, and we find Semillon and White Pinot or Chablis, for white wine, and Petit Sirah or Serine and Carignan, for red, as early as any, splendid bearers of perfect fruit and making excellent wine. I believe they would ripen anywhere and give satisfaction.

GEORGE HUSMANN.

Napa, Cal.

Early Grapes for Wine.

TO THE EDITOR:—Noticing an inquiry in regard to early wine grapes for Santa Cruz mountains, I beg to submit some of my own experience in this part of California.

The Semillon ripens early and has been considered the best white grape for California. It does well even on very poor soils. Its worst fault is early starting of the young growth in spring, which makes it unreliable in frosty locations.

The Franken Riesling is also an early grape and a heavy bearer even in frosty locations, but the wine is of rather poor quality. There are two other early white grapes which equal these two in bearing and make a superior wine—the Red Veltliner, also called Large Traminer, and Pinot Blanc Chardonay, also called Chablis. These two grapes, especially the first, have given the best satisfaction of any white grape in my immediate neighborhood.

The Chauche Gris is also a good grape for poor soils and high altitudes. The Sauvignon Vert is a very heavy bearer and a good grape for frosty locations, but the quality of its wine is rather low.

RED GRAPES.—It is more difficult to find red grapes which ripen early and are remunerative. The Carignan and Mondeuse are generally considered the two best red grapes for the Santa Clara valley and

other parts of California, but the first named is easily attacked by mildew in low, moist places. In the higher altitudes, on dry but deep soils, it does well, but it ripens late.

The Mondeuse ripens a little earlier, but not early enough to escape the heavy fall rains. I consider it one of the best grapes to plant on the deeper soils; on shallow soil it has proven a poor bearer. Another grape which has given good satisfaction on the richer lands is Petit Bouschet—a very heavy bearer, maturing its fruit quite early. The Mataro and Charbono are good grapes for poor soils and warm exposures; on rich soil they ripen too late and their wine is of poor quality. As best red grapes for these mountains, I consider the Tannat, Valdepenas and Petite Sirah. These ripen earlier than any of the red grapes named above, and are beginning to get noted for the superior quality of their wine and high productiveness if pruned long. They are fair producers even by short pruning.

LOCAL CONDITIONS.—Soils and atmospheric conditions are so varied in the Santa Cruz mountains, and have such a varied influence not only on the quality of the wine but also on the productiveness of the grape, that it is difficult to find a single grape which would be a success everywhere. The intelligent wine grower will not be content with varieties that are pronounced best by some of his neighbors who live three, four or more miles from his place in a different altitude and have their vineyard on a different soil. For instance, on my own place of about 1500 feet altitude, the Carignane and Chauche Gris are failures, but the Semillon bears well, while only about two miles east of me in an altitude of about 2000 feet, and a poorer soil, the Carignane and Chauche Gris bear well and the Semillon is a failure on account of late spring frosts.

HOW TO PROCEED.—The safest plan to follow for anybody setting out a young vineyard is to study the habits and peculiarities of different grape varieties thoroughly before he makes his selection and have one or two more varieties than would be absolutely necessary. In this way he will avoid the worst mistakes and will ascertain in the shortest possible time what varieties do best on his land, which will be of value to him for future plantings.

H. HOOPS.

Wrights, Cal.

THE POULTRY YARD.

Timely Hints.

TO THE EDITOR:—The season for raising chickens is again at hand, and the next three or four months will be busy ones with poultrymen. The majority of persons engaged in this pursuit are anxious to make their annual hatches from March to May, though success attends earlier hatches.

If due care is taken, there is no reason why chicks may not make their appearance as early as December—they should not be hatched later than May. The young chicks need constant care, and yet that only includes dry, warm quarters, proper food and efforts to subdue lice. These matters attended to, the chicks will thrive and the owner will have early broilers and layers.

THE FIRST FEW DAYS.—Much depends upon the care of chickens during the first few days of their lives. But, from start to finish, there are countless details to observe, and, to be successful, one needs knowledge, patience and a love for the work. If the chick has good parentage, it should live and thrive. Things to guard against in the first days are dampness, moist food and chilling winds. If chicks are kept upon the damp ground they will not do well; there will, of necessity, be weakness and a condition of the system favorable for various diseases. There is a great loss annually of young chicks from this one cause. Therefore, one cannot be too careful. Always have wooden floors to the coops or the brooder, and see that they are well cleaned each day.

ILLS OF YOUNG CHICKS.—Last year the writer had many young chicks whose eyes would close tight, as if sealed. They would stagger about a few days, and then die, starved to death. The same trouble was noted in many places in the East. It was not an uncommon complaint. Anointing the eyes with sweet oil was recommended, but, as a rule, it was not very beneficial. I am now of the opinion that this was due, in great measure, at least, to damp earth floors. With wooden floors this season I have not seen one chick thus afflicted.

Then there is the abhorred "pasting up behind" in young chicks that poultrymen so dislike to see. Inquiries as to cause and cure are frequent. Every person in the business will have to watch for this and guard against it. Prevention here is a thousand times better than trying to cure. Avoid all sloppy food, or even moist food.

FEEDING CHICKS.—Probably there is no better ration for the young chick for the first three or four weeks than bread crumbs, rolled oats and millet seed. So we give weak tea as a drink, but I have found a very little Venetian red—a product of iron—in the water to be very beneficial. This is highly recom-

mended by many Eastern growers, and its efficacy has been found by the writer.

As to feeding after the first three or four weeks, the rule, as laid down by many practical, experienced men is "little and often," as, indeed, during the first weeks of the birds' existence. It may seem heresy to some, but I think it a good plan to keep always before the chick—at least, after the first month—a shallow dish filled with coarse-ground cornmeal and a good quality of meat meal in a perfectly dry state. Feed occasionally, in addition, cracked wheat, millet seed or similar grains; then, as the chicks get larger, lay cracked corn before them—and they will grow and grow.

VERMIN.—Then there are the lice to fight. The youngster only a day or two old may have head-lice, which will sap his vitality, or lice on the body. Put a drop of sweet oil on the head and rub it in well. Sprinkle some fine insect powder on the body and see that it is well under the feathers. Observe all these details and the chick will thrive. Careless treatment brings a large percentage of young chicks to untimely death.

MEAT MEAL.—Just a word in favor of meat meal for fowls of all ages. It is a necessity for the greatest success, if one cannot get fresh meat or fresh ground bone; in fact, it is a question if it does not equal the bone, at much less expense and a vast deal of labor. Fowls need animal food in some shape, and it will pay anyone to purchase it.

FEEDING FOR EGGS.—As for feeding for eggs, many have had the best success, after experiments without number, with Sampson's method. Once tried, one does not care to go back to the old stereotyped plan so many persons have pursued for years and years. To produce the greatest number of eggs is what most poultry raisers are trying to accomplish, and the best results along this line, as in many others, come by repeated experiment. To profit the most by the experience of others one needs to keep posted by reading up-to-date poultry literature. But he must have judgment and common sense.

Napa.

A WARREN ROBINSON.

THE VETERINARIAN.

Answers by Dr. Creely.

MALIGNANT SWELLINGS.

TO THE EDITOR:—I have two horses which have swellings on their right hind limbs near the ankle joint. The swellings enlarge until they extend the full length of their limb, when they break and discharge for perhaps a week, after which the swellings subside, the place heals and again the poisonous secretion collects and causes another eruption and consequent discharge. These occur at intervals of about a month apart. The animals do not go lame at any time, nor do they lose their usual good appetite, and apparently retain their flesh. Would you kindly suggest a remedy?—A. B. HOLDRIDGE, Dixon.

This is a malignant lymphatic disease which needs a veterinarian's skill—I would suspect farcy.

SKIN DISEASE OF THE COW.

TO THE EDITOR:—I wish to inquire through the columns of your paper the following: I have a grade Holstein cow which has something like the mange, similar to that which is often seen on white hogs. The hair comes out and the skin is rough, I presume from rubbing. It only affects the white spots on her; the dark is perfectly healthy; it is of a dry nature and scaly. She is in fine condition and will soon calve. Will some one kindly inform me what to do for her?—J. MCKINDLEY, Cosumne.

Use the mixture prescribed last week, viz: Creoline, 1 oz.; oil of cade, 4 oz.; eucalyptus, $\frac{1}{2}$ oz.; olive oil, 8 oz.; coal oil, 1 oz.

Mix well and apply once daily.

DIRECTOR MERRIAM of the Census Office at Washington is trying to develop the agricultural features of the census and has invited statements from farmers of last year's work. The first and one of the best of these statements came from a woman who operates a farm in Pennsylvania on her own account. The paper shows not only the acreage, quantity and value of each crop, but contains also a good inventory of live stock and a detailed statement of the quantity and value of the miscellaneous articles produced. If every farmer would imitate this woman the agricultural report of the twelfth census would be a marvel of completeness and accuracy, and would also show the entire productive strength of the United States in food products.

CANADIAN silver coins in Spokane and Sound cities pass at their par value, as does the American silver on the Canadian side of the boundary. Oregon and California banks discount Canadian bills 1% or 2%; a greater discount is made on silver, a Canadian quarter passing for 20 cents, a discount of 20%. Anywhere along the boundary line the silver coins of both countries pass on an equal footing, for there is very little difference in their value, and people keep crossing back and forth across the boundary.

Agricultural Review.

ALAMEDA.

FRUIT GROWERS' MEETING.—Oakland Enquirer, Jan. 26: An organization, to be known as the Eden Township Fruit Growers' Association, is to be formed. The proposed organization is an outgrowth of suggestions offered at the convention in San Jose. An effort will be made to agree upon a uniform rate at which to sell fruits. The committee in charge of the meeting consists of H. W. Meek, M. C. Petersen and I. C. Parsons.

FRESNO.

VERY LITTLE SNOW.—Sanger Herald: At present there is no snow at either Millwood or Converse basin, which is unusual at this time of the year. The snowfall in the mountains during November and December generally packs solid and affords a good water supply for irrigation during the summer, but that which falls later melts away immediately, swelling the streams at a season of the year when water is not needed on the plains.

LARGE PAYMENT FOR RAISINS.—Fresno Republican, Jan. 25: The directors of the California Raisin Growers' Association held an important meeting last evening, with M. Theo Kearney presiding. The most important matter discussed was the settlement with the packers, which has been nearly closed. It is estimated that the Association has on hand about \$300,000, which it was decided to pay out to the growers at once. When the settlement is completed there will be about \$350,000 to be paid out.

HUMBOLDT.

PRODUCE EXPORTS.—Eureka Standard: In all of the principal products, except potatoes, exports of agricultural products for 1899 were above any year on record, both in amount and value, the total value of produce being \$2,108,000. The value of butter alone was \$1,027,908, the entire dairy products being valued at \$1,103,000. Livestock came next with a value of \$350,000, while exports of wool were valued at \$210,748 more, the exports of all three items having been the heaviest for any year on record. Apples footed up heavier than ever before and increased the values of exports \$26,711. Butter exports increased from 3,914,160 pounds in 1898 to 4,568,480 in 1899; condensed milk and cream from 4703 cases to 10,898; wool from 422,000 pounds to 1,186,212; eggs from 32 cases to 284. In livestock exports of beef cattle increased from 3613 to 5624; sheep 1386 to 4769; hogs from 2464 to 5138, and calves from 489 to 1815. There were shipped in 1898 34,822 boxes apples and in 1899 41,094.

KERN.

CATTLE RECEIVED.—Bakersfield Echo, Jan. 25: The Kern County Land Company has received two trains of twenty-three carloads of range cattle from Deming, New Mexico. Both were unloaded at Shafter.

KINGS.

IRRIGATION DISTRICT FINANCES.—Hanford Sentinel, Jan. 25: The total amount received by the Alta district from all sources was \$34,029.08. There was in the treasury at the beginning of the year \$11,024.92, and in the treasury to date, January 2, 1900, \$16,373. Paid out during the year for all purposes, \$28,680.87. Litigation expenses were \$2292.45, and attorney fees for the year were \$1900, making a total of \$4825.45; sundries, not itemized, \$985; directors' salaries, \$603.65; officers' salaries, \$1439; printing, \$582.10.

LOS ANGELES.

OFFICERS ELECTED.—Azusa Pomotrophic, Jan. 25: At the annual meeting of the Contract Water Company the following were elected directors for the year: J. P. Gordon, W. C. Wilson, J. H. Hommell, S. S. Scofield and H. S. Rogers. The Board elected Gordon president, Wilson vice-president, Hommell treasurer, and Rogers secretary.

ORANGE.

FIGURES ON THE CELERY CROP.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The safest, best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blisters from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

Santa Ana Blade, Jan. 19: The peatland just now is about the busiest spot on the map of Orange county, for the crop that has made that section famous is being harvested and sent out at the rate of twelve to fifteen cars a day. The rough estimate of the yield of celery was 1000 cars at the close of setting time, but the exact figures will fall to foot up more than 900 cars, and that quantity is a little more than half shipped. But 900 cars means a goodly sum of money to realize from such a comparatively small area of ground, and to the farmer unaccustomed to the productiveness of peat soil the net returns will probably be accepted in a spirit of doubt. But, at the risk of being credited with provarication, some figures will be given to convey an idea of the importance of this industry that has sprung into existence within the past few years. The celery is packed in crates after being cut and sorted, each crate holding about 8 1/2 dozen bunches, and from 150 to 160 of these crates fill a car. The price received on the car is about an average of 15 1/2 cents a dozen bunches, so that a car of celery is worth to the grower \$210.80, and 900 cars at that rate amounts to \$189,720; and as there is said to be 1200 acres of this vegetable cultivated this season in the section under consideration, the return per acre is a shade more than \$158. The Chamber of Commerce here has figured in the past that the total returns from the celery crop would foot up about a quarter of a million dollars, and, taking into consideration the proportion of the cost of transportation paid out by the railway companies in California, the sum will not fall far short of that amount.

PLACER.

FRUIT GROWERS' MEETING.—Newcastle News, Jan. 24: The first annual general meeting of the Fruit Growers' Association of Placer County will be held in Newcastle on February 5th at 10 A. M.

RIVERSIDE.

NAVELS EARLIER THAN USUAL.—Riverside Press, Jan. 20: In every district the Navels have matured rapidly and are now fully ripe, and the opinion is gaining ground that the Navels generally will have to be moved earlier than last year. This also is the case with Mediterranean Sweets, which are forcing themselves upon the attention of the shippers practically three weeks in advance of any recent season. From all these conditions we would hold that heavy shipments of fruit during the next six weeks will be necessary, all of which should move very freely and at average prices about as obtaining now, with no real danger of decline unless the markets become congested on account of blizzards.

SACRAMENTO.

SUGAR BEET FACTORY.—Sacramento, Jan. 22: There is a movement on foot to establish a \$600,000 beet sugar factory in Sacramento, and within a few days a proposition is to be submitted to the farmers looking to the guarantee of a sufficient acreage of sugar beets to render the venture a success. Fred J. Keisel of Ogden, Utah, who is largely interested in the beet sugar industry in Utah, is at the head of the new enterprise. Two-thirds of the capital stock has been subscribed by Keisel and his Ogden associates, and the remaining third is taken by local capitalists, principally stockholders of the California State Bank, of which Keisel's son is assistant cashier.

SAN BENITO.

SUGAR BEET PRODUCTION.—Hollister Advance, Jan. 26: The San Juan valley furnished 23,000 tons of sugar beets to the Spreckels factory during the past season.

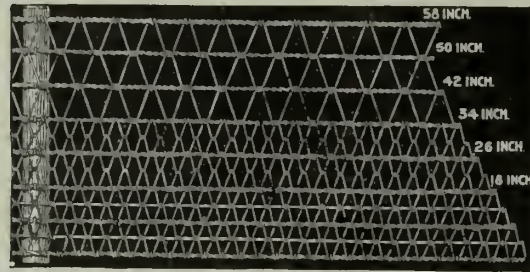
WILL MOW BEFORE PLOWING.—Hollister Bee, Jan. 24: Since our last writing the weather has been very favorable for farming and most of the farmers are nearly through, but in Watsonville they are just beginning. The vegetation is so far advanced that it will retard the orchard work. Some contemplate running a mow through before plowing.

SAN BERNARDINO.

LONG KEEPING APPLE.—Redlands Citrograph, Jan. 20: Harmon Weaver, of East Highlands, brought from Illinois apples of a new variety known as the Missing Link—so called on account of their keeping quality. They are lightly striped, greenish yellow and oblong in form. One of the apples was picked from the tree in the fall of 1898. It is only slightly shriveled and, after a lapse of fifteen months, appears almost as fresh as its mate of the edition of 1899.

SAN DIEGO.

EXPERIENCE WITH POTATOES.—San Diego Union, Jan. 25: T. Walker, National, planted nine sacks of Burbank potatoes and three sacks of Early Wisconsin, and dug three times as many from the latter as from the Burhanks. Early



The Best Fence

is the only fence you can afford to put on your farms, plantations or ranches. Anything less than the best means continued trouble for you.

The Ellwood Steel Fences

are made of spring steel especially drawn for this fence. Galvanizing and weaving are perfect, insuring longest life to the fence. Costs no more than makeshifts. Sold by our agents in every town. If you fail to find an agent in your town write to the manufacturers.

American Steel and Wire Co.,
CHICAGO, NEW YORK, SAN FRANCISCO.

Wisconsin seed is scarce. Plant only those that are ready to sprout. One eye of a large potato is sufficient for a hill; if the potato is small, plant all of it. The Flat Peerless is a good potato. In frostless locations plant from now until March. Plant in loam, loose adobe or sand; keep them always moist.

SAN JOAQUIN.

VINES REPLACING TREES.—Stockton Mail, Jan. 24: Dr. Bentley, of Woodbridge, says that in some localities near Lodi fruit trees are being taken up and vines planted in their stead. The trees are healthy and in full bearing, but the owners say that wine grapes pay better than fruit. The Zinfandel, particularly, gives a very heavy vintage there.

SUGAR BEET PLANTING.—Mail, Jan. 25: Next month the Crockett Company will put in about 1500 acres of sugar beets in San Joaquin county. The soil conditions are such now that a heavy crop is looked for. The intention is to plant about 1000 acres to sugar beets near New Hope, and A. J. Larson, of Lodi, who is the agent of the company, and will have charge of the beet fields, will put in 160 acres.

HOLDING WHEAT.—Stockton Mail, Jan. 17: Despite the steady decline in wheat, farmers are not offering any great volume for sale. There are several reasons for this. It is stated on good authority that there is not less than \$1,000,000 loaned on wheat stored in the warehouses of Stockton. Last summer money was offered at 5 per cent. The low rate of interest and the belief that freight rates would decline and wheat would go to higher prices caused more wheat than usual to be stored. Having made provision to carry their crop for a time, farmers are not compelled to sell, and as they have held on so long they hope that something will turn up to give wheat an upward tendency. Farmers of this section are noted for their persistence in holding wheat. Other people raise wheat to sell, and the shippers usually get it as soon as it is threshed. In this region, however, wheat is raised to be stored. "This is the location of the largest milling plants in the State," said Captain J. W. Smith this morning, "and every farmer imagines that his wheat is first-class milling. Hence he is determined to sell it to the mills, and if they do not take it when he hauls it to town, he stores it, in the firm belief that they will be anxious to get it before the season is over. Of course, the mills cannot use all the wheat that is raised in this vicinity, but every farmer thinks they can use his, and that is why so many of them store."

HORTICULTURAL COMMISSIONERS' REPORT.—Mail, Jan. 27: The report of Fruit Inspector M. R. White for last month showed that he had inspected 1535 boxes of oranges, 2491 boxes of apples, 196 boxes of lemons and 20 boxes of limes. He condemned and ordered returned to shippers 248 boxes of apples, 188 boxes of

oranges and 14 boxes of lemons. He also inspected 100 Bartlett pear trees, 10 orange trees, 10 Japanese persimmon trees, 5 bundles of trees and 5 bundles of grape cuttings, all of which were found to be in good condition. He sent out to prominent farmers 1000 circulars giving the text of the law governing the appointment of Horticultural Commissioners and Inspectors, and their duties, giving notice that the provisions of the law would be strictly enforced hereafter. The report of Inspector Ralls showed that he had inspected 193 boxes of apples, 238 boxes of oranges, 7 boxes of lemons and 3 boxes of limes. He also inspected 47 orchards, all of which he found more or less infested with red spider, San Jose scale, fungus growths, or other pests.

SAN LUIS OBISPO.

STOCKMEN ORGANIZE.—San Luis Obispo Tribune, Jan. 26: The stockmen of Cambria have organized for protection against cattle thieves. The following officers were elected: Alex Patterson, president; R. Dodson, vice-president; Gilbert Van Gorden, treasurer; R. A. Minor, secretary; M. E. Taylor, Alex Patterson, R. Dodson, William Phillips and Gilbert Van Gorden, directors.

FARMING METHODS.—San Luis Obispo Tribune, Jan. 17: In the last five years more has been lost by the farmers of this valley by bad methods than by lack of rain, states R. M. Shackelford. If farming of the right kind were done, we should no longer hear of the Salinas valley as being an unsafe place to farm, but it would soon become known as a safe and profitable country for the farmer. But as long as farmers try to farm every acre in sight and hire men and teams to do the work and only summer-fallow the land they have not been able to seed in time for a crop, we shall always have failures and poor crops. I have been a close observer of the methods of the farmers of the Salinas valley, and especially have I observed those farmers who farmed largely and who did not summer-fallow. Many of these started in several years ago well fixed, and with hardly an exception they are now stranded, and many have not only to mortgage their crops, but their teams and implements as well to get seed and supplies to longer farm.

One of the Finest Catalogues Ever Published.

One of the most valuable seed catalogues ever issued from any house in the United States is just now being distributed among the friends and patrons of the great seed house of the Cox Seed Company of 411-413-415 Sansome street of this city. These people are among the largest growers and handlers of the best seeds and plants in the West, and growers on the coast are giving them the preference in orders over the Eastern seedsmen. A copy of the new catalogue will be mailed free to any address on receipt of request, addressed to the company's headquarters in San Francisco.

WANTED.

A single young man who is a competent budder and grafter and understands general nursery work. Give references.

Address GEO. C. ROEDING, Fancher Creek Nursery, Fresno, Cal.

TRY THEM FOR
BROWN'S
Coughs, Colds,
Asthma, Bronchitis,
Hoarseness
and Sore Throat.
Fac-Simile Signature of *John L. Brown* on every box.

HORTICULTURE.

Failure of Olive Crop in Southern Europe.

In the PACIFIC RURAL PRESS of Jan. 20 we alluded briefly to a report on this subject by Consul Skinner of Marseilles. His full report just received from the State Department at Washington is of much local interest:

The olive crop in Italy, France and Spain is practically a failure. As compared with an average crop, it will hardly reach 30% in the opinion of well-informed judges. In some sections, the fruit is still upon the trees, but enough is known to warrant the expectation of a steady rise in prices. The Italian olives are the greatest sufferers from the pest to which existing conditions are due, the south of France being also affected, and Spain in some localities. The damage has been wrought by a fly known as *Mosca olearia*, which deposits its eggs in the green fruit. A grub is hatched, and this grub destroys the olive, or at least so injures it that the oil is very inferior in quality, and is especially bad for table use.

For some years, edible oils have been declining in price, a fair average for fifty years being 38 cents per kilogram of 2.2 pounds. Last year, European oils fell to 19 and 23 cents per kilogram, and Tunis oils went to even 15 cents. Prices have so far recovered that good oil is at 38 cents and Tunis oil at 28 cents. The effect of the shortage upon prices of olive oils for mechanical purposes is well shown by the contract prices arranged for by the French navy. The oils must be pure and pass severe tests. Last year the contracts ran from \$11.96 to \$12.54 per 100 kilograms (220 pounds). Contracts for

similar oils were let a day or two ago at \$19.10 for the same quality.

In Europe, olive oil is used very generally for the purposes for which lard oil is employed in America. The upward tendency of prices is encouraged by a shortage in the cotton-seed crop in America and a deficient crop of oleaginous grains in Africa and India.

I understand that virtually no effort is made here to counteract the influence of the olive pest. The operations of the insect are regarded as a dispensation of Providence, to be accepted in meekness of spirit. To the lay mind, it would seem that the fly could be successfully fought with American spraying machines, provided an effective chemical combination could be found to put in the water. These flies will be in evidence for some years to come, and appear to be good subjects for American ingenuity and enterprise.

THE MILLION DOLLAR POTATO
Most talked of potato on earth! Our Catalog tells—so also about Salzer's Earliest Six Weeks' Potato. Largest farm and vegetable seed growers in U.S. Potatoes, \$1.20 and up a bbl. Send this notice and 5c. stamp for Big Catalog.

JOHN A. SALZER SEED & LA CROSSE WIS.

Cocoanut Oil Cake.

THE BEST FEED FOR STOCK, CHICKENS AND PIGS.

For sale in lots to suit by
EL DORADO LINSEED OIL WORKS CO.
208 California St., San Francisco, Cal.

DR. LEAVITT'S
Double Power
DEHORNING
CLIPPER.—V. blade.

Leavitt Mfg Co., Hammond, Ill., U.S.A.

SPRAY PUMPS.

Nozzles for Tree Spraying and Whitewashing. Disinfectants for Chicken Houses, Barns, Stables, Dairies, etc. Walnwright's Nozzles and Pumps are the Best and Cheapest. Catalogues sent. Agents wanted. Wm. Walnwright, Mfr., 1409 Jackson St. S. F.



THE LOSS OF AN EYE—terrible calamity. The tip of a horn often does it in tying up cattle. Cut off the horns quickly and humanely with the **Keystone DEHORNING Knife**. Cuts on four sides, no crushing or tearing. Highest Award World's Fair. FULLY GUARANTEED. Write **A. C. BROSIUS, COCHRANVILLE, PENN.**



Blood Will Always Tell.

The Lynwood Herd of Swine have again been awarded the majority of premiums at the State Fair, although the competition was the greatest ever known and the exhibit much the largest. When you want something real choice that you can depend upon write **JAS. R. BOAL, Mgr., 128 W. 25th St., Los Angeles, Cal.**

For several different breeds of Poultry, including two breeds of Turkeys, and Pican Ducks,

Address **SAM'L M. COPPIN**, Pleasant Grove, Sutter Co., Cal.



JUST AS NATURAL as the old hen and a good deal more reliable. Doesn't break its eggs or make its chicks lousy. Doesn't stay off the nest and allow the eggs to chill but hatches every egg that can be hatched.

THE PETALUMA INCUBATOR

Is absolutely perfect as to incubator essentials—proper application and distribution of heat and moisture, regulation and ventilation. For 54 to 324 eggs. **WE PAY FREIGHT ANYWHERE** in the U. S. Handsome catalog free. Petaluma Incubator Co., Box 19 Petaluma, Cal.

THE MOST LIVE CHICKS

from a tray full of eggs. That is what the **SURE HATCH INCUBATOR** is designed to produce, and it does it with great regularity. Hundred in use. Automatic through out. Let us quote you a price laid down at your station. Our catalogue is chock full of practical Poultry information. It is free—not sold. **SURE HATCH INCUBATOR COMPANY, Clay Center, Nebr.**

FANCY POULTRY.

We keep all the leading varieties. Have 60 breeding yards. Why not improve your stock. Man's of the Improved Pacific Incubator. Absolutely self-regulating, hot water. Send stamp for our catalogue of Incubators, Wire Netting, Blooded Fowls and Poultry Appliances generally. Remember the Best to the Cheapest. **PACIFIC INCUBATOR CO., 1317 Castro St., Oakland, Cal.**

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1312 MYRTLE ST., OAKLAND, CAL.
100-Egg, \$16; 180-Egg, \$24; 320-Egg, \$45.
Brooders, Thermometers, Fluid, etc.
SEND FOR CIRCULAR.



310 First Premiums

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SHOEMAKER'S POULTRY BOOK on

and Almanac for 1900, two colors, 160 pages, 110 illustrations of Fowls, Incubators, Brooders, Poultry Houses, etc. How to raise Chickens successfully, their care, diseases and remedies. Diagrams with full descriptions of Poultry houses. All about Incubators, Brooders and thoroughbred Fowls, with lowest prices. Price only 15 cents. **C. C. SHOEMAKER, Box 598, FREEPORT, ILL.**

LIVE OAK STOCK FARM,

Six Miles N. W. from PETALUMA, on the Petaluma and Sebastopol Road.

FRANK A. MECHAM, Prop.
Importer and Breeder of

Red Polled Cattle.

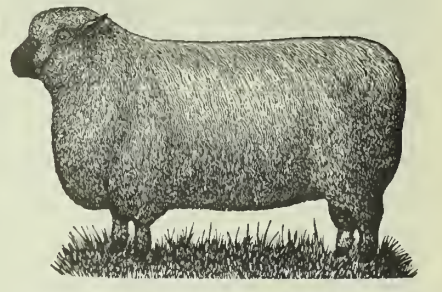
Color Deep Red. Both Sexes for Sale.

Address all communications **PETALUMA, SONOMA CO., CAL.**

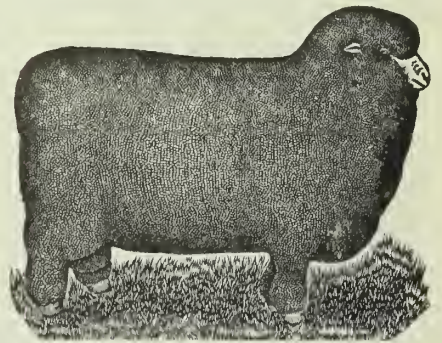


FRANK A. MECHAM.

Importer and Breeder of Shropshire Sheep. They were all imported from England, or bred direct from imported stock.



We have also bred American Merinos—Hornless Sheep—for 30 years. They are a large sheep, without wrinkles. Rams will produce 20 to 25 pounds of long, white wool yearly. Sheep of both sexes for sale.



FRANK A. MECHAM, Importer and Breeder.

Shipping Points: **PETALUMA AND SANTA ROSA SONOMA CO., CAL.**

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr., and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds. 21 Jerseys and Durhams competing. **F. H. BURKE, 626 Market St., S. F.**

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. **Oakwood Park Stock Farm, Danville, Cal.**

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs. Poultry. **William Niles & Co., Los Angeles, Cal.** Breeders and Exporters. Established 1876.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A.J.C.C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale

POULTRY.

TRACY POULTRY YARDS, Tracy, Cal. Wm. M. Langdon, Prop. Specialties: B. P. Rocks and S. C. W. Leghorns. Eggs \$1.50 per 13. Fine lot of Plymouth Rock roosters for sale reasonable. Write for prices.

SANTA TERESA POULTRY FARM, Eden Vale. Santa Clara Co., Cal. Buff Cochins, Barred Plymouth Rocks, White and Brown Leghorns, White Wyandottes, Black Minorcas.

WOOD & CO., Danville, Cal. Vigorous, thoroughbred White Leghorn, Brown Leghorn, Black Minorca and B. Plymouth Rock cockerels for sale, singly or in lots. Price \$1.00 each.

WHITE WYANDOTTES & LEGHORNS. Pure. Eggs cheap. **A. Warren Robinson, Napa, Cal.**

WILLIAM NILES & CO., Los Angeles, Cal. Poultry, Belgian Hares. Imported pedigreed stock.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SWINE.

BERKSHIRE, POLAND-CHINA & DUROC HOGS. Choice; Thoroughbreds. **Wm. Niles & Co., Los Angeles, Cal.** Established in 1876.

P. H. MURPHY, Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Hogs.

SHEEP AND GOATS.

C. P. BAILEY, San Jose, Cal. Angora Goats and Persian Fat-tailed Sheep. Catalogue free.



ALAMO STOCK BULLS

JOHN SPARKS, Prop.
RENO, NEVADA.

JOHN SPARKS, Importer and Breeder of REGISTERED HEREFORD CATTLE and THOROUGHbred SHROPSHIRE SHEEP, Registered Hereford Bulls and Young Stock for Sale. Address: RENO, NEVADA.

THE HOME CIRCLE.

The Seven Ages of Man.

All the world's a stage,
And all the men and women merely
players;
They have their exits and their entrances,
And one man in his time plays many parts,
His acts being seven ages. At first the
Infant,
Mewling and puking in his nurse's arms,
And then the whining Schoolboy, with his
satchel,
And shining morning face, creeping like
snail
Unwillingly to school. And then the
Lover,
Sighing like furnace, with a woeful ballad
Made to his mistress' eyebrow. Then the
Soldier,
Full of strange oaths and bearded like the
pard,
Jealous in honor, sudden and quick in
quarrel,
Seeking the bubble reputation
Even in the cannon's mouth. And then
the Justice,
In fair, round belly, with good capon lined,
With eyes severe and beard of formal cut,
Full of wise saws and modern instances.
And so he plays his part. The sixth age
shifts
Into the lean and slippered Pantaloone,
With spectacles on nose and pouch on
side,
His youthful hose well saved, a world too
wide
For his shrunk shank; and his big, manly
voice,
Turning again toward childish treble,
pipes
And whistles in his sound. Last scene of
all,
That ends this strange, eventful history,
Is Second Childhood; and mere oblivion,
Sans teeth, sans eyes, sans taste, sans
everything.

—Shakespeare.

A Honeymoon With Three Bears.

Uncle Jimmy Spencer, an old hunter of Powell mountain, has had over eighty years' experience as a hunter and trapper in the forests and along the streams of the Allegheny mountains in Virginia and West Virginia, and is to-day as straight as an arrow and as hardy as one of the mighty oaks under whose branches he has slain hundreds of wild animals, and whose leafy umbrage has sheltered him from the storms of winter and heat of summer. A short time ago I stopped a few days with Uncle Jimmy and, as heavy rains made it impossible to travel, I passed the time around the pleasant fire of an old-fashioned fireplace, listening to the old hunter's stories of his experiences, and making mental notes of many of the most interesting. One story which he told of his early married life struck me as particularly unique and interesting, and I will give it just as it came from the lips of the old man himself.

"It was 'way back in the early '40s, when these woods war alive with the finest game in the world, that I settled down on this spot. My wife and I had been married only about a week, and we were looking around for a suitable spot on which to build our future home. It is true that I've always been a hunter,

but, then, I always had a hankering for a home—some place in which I could depend upon comfortable shelter and a resting place during warm weather, when there was no hunting to be done, and during the cold blasts of our mountain winters. Well, we arrived here, after several days' search, and brought with us all our earthly possessions, which consisted of a bed and bedstead, a few kitchen utensils and three or four split bottom chairs. There wa'n't a stove within thirty miles, and for that matter there's not very many much nearer now. As soon as we got here I unhitched the horses and tied them up under a tree and, while Nancy was getting dinner, I began work in cutting down trees with which to build our eabin. By the evening of the second day I had cut enough logs to make a small, one-roomed cabin as a beginning. The next morning I started out on a hunt for fresh meat, thinking that I would be able to get a deer in the course of an hour; but somehow, the deer seemed mighty wild, and I didn't get a shot for a couple of hours after I left camp, when I knocked over a fine doe. As soon as possible I was on my way back with the deer swung over my shoulders and along I went leisurely until I got within a couple of hundred yards of camp, when I heard somebody screaming and yelling for me. I listened only long enough to find out that the screaming came from the camp, when I dropped the doe and broke into a run, and it didn't take me long to reach camp. I tell you, and what do you suppose I found when I got there? It was a comical sight; and if I hadn't been afraid that something serious might happen I'd a had to lay down and laugh. There was the camp, sure enough, and there were two big black bears right in the middle of it, but where the dickens was Nancy? The darned bears was a upsetting everything and pokin' their noses into every corner of the sled. One of 'em tossed up a bedquilt and it fell over the head of the other, an' then there was a scramble to git out. Both of the bears was enjoyin' their fun. Then one of them knocked a basket out of the sled and, as it went rollin' down hill, the other ran after it an' hit it a clip, knockin' the basket 10 feet into the bush, spatterin' eggs all 'round. About this time I saw that thar was somethin' up in the tree close by the sled, and that somethin' looked to me very much like a badly skeered woman. I didn't have ter look a second time, for the object give a scream and yelled: 'Hurry up, Jim, there's a big bear climbin' up the tree.'

"Sure enough, just then I saw the big black head of a tremendous bear just risin' 'bove the limb away out on which Nancy was a settin' holdin' on an' yellin' like a house afire. I soon got a bead on the bear's head, an' shot him an' down he tumbled. The bear wa'n't killed, but he was hurt too bad to get away, and I turned my attention to the others. There wa'n't no breech loaders in them days, an' I had to reload my gun, which it didn't take me long do. When I had rained home the bullet and primed the gun I took aim at one of the bears on the ground and let him have it, but I must have been a little excited, I guess, for I only shot off the end of his nose. The bear give a roar of rage an' pain an' come gallopin' right at me, an' I didn't have time to reload or git out of the way, an' as the bear got on his hind feet in front of me I took him a whack on the head an' knocked him down on all fours, but he was up quick as litnin' an' at me again. I give him a ripper over the eyes an' he struck me a belt on the side which nearly knocked the wind out of me. Just then old Caesar, my dog, who had been out huntin' on his own hook, come runnin' through the brush an' with a yell caught the bear by a hind leg. Old Caesar, meebby, saved me from gittin' wiped out, for it give me a minit's time—just enough to throw in a charge of powder an' drop in a wet bullet, without waddin'. I throwed open the pan an' dropped in a few grains of power an' brought the gun to my face just as the third bear come up to his comrade's assistance. One good shot behind the foreleg an' he was my meat. By this time the bear, Caesar tackled had

knocked the old dog 10 feet away an' was comin' again. We had skirmished, fust an' last, over considerable ground, an' when the bear come up I found myself in front of the fire Nancy had built before the bears chased her up the tree. In less'n a second I had a firebrand in my hand, an' when the bear got up I just jammed that hot brush into his face. Jerusalem, jimminy! how that bear did growl an' sneeze! He'd got it hot, an' it must have burnt him bad, for he laid down an' rolled over an' over an' yelled an' whined while ole Cese chawed him, first on one leg an' then on the t'other. Of course I didn't wait to see how it would wind up between 'em, but began to load my gun as fast as I could. Before I was done, howsomever, Nancy jumped down out of the tree an' picked up the ax, an' Great Scott! how that woman did light into that bear! She hit him over the head an' then whacked him on the foreleg, nearly cuttin' it off; an' then she hit him on the neck, an' I do believe if I hadn't yelled to her to stop she'd have made sausage meat of him before she'd have let up. She was the maddest woman I ever saw, an' I really believe if I had joked her then 'bout bein' so badly skeered she'd have given me a lick or two, wouldn't you, mother?" said Uncle Jimmy, turning toward the old lady, who laughed and replied:

"Now, father, I thought you promised never to tell that story again."

"Well, I won't," said the old man. "Well, there were three bears, all of 'em dead, but you should have seen the muss things were in. There wa'n't a bedquilt in the lot big enough to cover old Caesar, an' beside, the bears had knocked and banged most everything else into smithereens. We had to make the best of it, though, an' so we went to work an' skinned an' dressed the bears an' the doe, which I had brung in, an' hung 'em up in the trees. We then got supper an' went to bed in the sled, after buildin' up a big fire. In a couple of days after the rumpus we had finished our eabin an' moved in, after which Nancy began to feel safe, but it was a mighty long time before mother could bear to hear anything said about our first day in camp."—Brooklyn Eagle.

"Afternoon Tea."

Our English cousins, who understand some things better than we do, never fail to have their cup of afternoon tea, with its accompaniment of thin bread and butter, or plum cake, or scones, at five o'clock. This is an every-day function, prepared for and enjoyed by the family as a matter of course, and shared with friends who happen in, people knowing that five o'clock is a convenient hour for finding their intimate acquaintances at home and at leisure. Over the teacups friends may enjoy the latest gossip, chat about a play or a programme, discuss whatever is uppermost in popular regard, and, having touched hands in the game, separate and go on, the better for the contact.

Nothing can be imagined more informal, less exacting, than the ideal afternoon tea. It may be poured by the mistress of the house or by her daughter, and handed about by a child, or a man who has dropped in, or by a maid. The tea itself may be a blend of Oolong and Souehong with a dash of orange pekoe; it may be the straw-colored infusion of Japan, it may be the pungent brew of India, or the soft and smoothly fragrant tea of Ceylon. In every case it must be freshly made, with water freshly boiled, poured over the tea leaves and allowed to steep two minutes and no more. A tea cozy to keep the pot hot, a spirit lamp under the copper kettle, sugar in even lumps, cream, or sliced lemon, as preferred, a gracious matron, and friends who know one another—these are the requisites for afternoon tea.

When salads, creams, confections are added one may have a spread; one may fitly regale her friends at a reception after this liberal fashion, but she has then passed quite out of the realm of afternoon tea into one of much more splendor and state, and much less homely fun and easeful pleasure.—Collier's Weekly.

Weak Lungs

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A Woman in the Speaker's Chair.

There are three women in the House of Representatives of Colorado. Mary H. Kinkaid in Ainslee's for January, gives this account of the Hon. Frances S. Lee, Member from Arapahoe:

"Mrs. Frances S. Lee, who is the youngest of the three women Representatives, was born in Chicago less than thirty years ago. When eleven years old, she went to Colorado with her parents, who settled in Denver. She was graduated from the West Denver High School and taught a short time before her marriage to Frank W. Lee, a leader in the Colorado State Federation of Labor. Mrs. Lee is the mother of five children. The youngest was three years old when the campaign of 1898 began. Although her home duties have kept her busy for a number of years, she has been a conscientious student. Through her husband's affiliations she had acquired a wide knowledge of labor conditions. She joined the Colorado Woman's Democratic Club because she felt it to be her duty to do her part as a citizen. She soon gained the friendship of the members, who put her forward as their candidate for the Legislature. Mrs. Lee was slow to accept the honor, for she had been too much occupied to cultivate the art of public speaking, and she hesitated to assume duties so at variance with her quite habits. The club had chosen its candidate, and the members would not hear of her refusal to run for office. When Mrs. Lee pleaded that she could not neglect the children there were members who offered to stay with the baby if necessary. Mrs. Lee was reminded that where there is a will there is always a way. Her name was presented to the Democratic Convention and she was nominated without opposition.

"The campaign showed that the woman who could manage a house successfully and who could care for a family of children had the qualities of a leader. When the time came for her to take up her public duties it was evident that the retiring home woman could be trusted to do her part in the Legislature.

"Mrs. Lee introduced five bills touching educational and labor questions. One was passed, although each was the subject of earnest debate. With the other women legislators, Mrs. Lee did much toward pushing the reform measures that became laws. Mrs. Lee is of medium height and slender form. Her features are delicate, and her face shows that she is of a high-strung, sensitive nature. By her womanliness and her gentleness, she won the chivalrous regard of the men who were her colleagues. She was the first woman ever called to the chair of the House during a session of a Committee of the Whole. The other women members had often presided during the regular discussions, but when Mrs. Lee was asked to take the gavel during the consideration of an important question there was a momentary sensation. The Honorable Member from Arapahoe blushed and showed some hesitation.

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Then she ascended the steps leading to the Speaker's stand and took the big chair as if it were her habit.

"During the session Mrs. Lee not only managed her house and cared for the children, but she found time to entertain many guests at her home. Someone suggested that the cares of State must be something of a burden, when added to domestic duties. Mrs. Lee laughingly replied that any one who had the executive ability to run a house and rear several children ought not to find any duties too exacting for her strength."

The Secret of Feminine Charm.

No woman is willingly uninteresting. Many become so to themselves and to others, but drift insensibly into the condition without knowing why.

An object which does not change soon ceases to rivet attention or to be interesting to us. Our voluntary attention cannot be chained to it, and often, as we force ourselves to reconsider the unchanging object, our attention will fly from it at the first casual attraction in another direction. This truth of psychology is familiar to every student of this occult and subtle science, to those who investigate it as fascinating as a romance, notwithstanding the mysteries and obscurities of the subject.

Pondering on the theme, thought became associated for some intangible reason with Mrs. B., a married friend, whose acquaintance I made when she was young. Why, I questioned, had her husband's interest in her gradually changed and slipped away? He loves her still. He does much for her pleasure, but his interest is gone. He does not care to know what she thinks and hardly what she does. This line of thought persisted as I read my latest psychological author. At last a vague connection between the two became clear: Mrs. B. has become a person who does not change. She has ceased to move, to progress. Her husband no longer perceives growth. He no longer has the fascination of a changing object before him. Ceasing to use or improve her mind, she has become one of those very objects described as impossible to arouse or to hold our voluntary attention.

The secret power she had of enchanting her husband while he was still her lover has grown illusory, and the charm which her progressing and developing character as a girl had for him has flown with the years. Is it possible that, with the charm once broken, she can ever again awaken his interest? His love is unchanged—but can she regain her power over his voluntary attention? In the words of the psychological text-books, can she become interesting? Immobility of mind and character has killed her charm and deadened her power to attract her husband's attention.

Now as a woman grows older she ought to be more attractive in certain ways than she could be in her youth. In only exceptional cases can a woman improve in physical beauty, and even were that always possible, still there might be stagnation and immobility of character to counteract the facial charm and render it null and even daily more unsatisfactory. But a woman whose mind is alert and thoughtful, a woman who is always learning, will be that object which is constantly changing, and in consequence is always interesting. And beyond this, a woman whose heart and sympathy are ever expanding, who receives ever more cordially noble ideas, whose character is daily elevated by the practise of kind thoughts and helpful deeds, is constantly gaining and growing; that is, moving—going onward—not staying where she was, but advancing to new arcs in the orbit of her being. She

draws the eye and the interest as the planet in its course.

The woman whose temper is daily growing sweeter and finer—in other words, who is moving toward higher attainment—whose intellectual horizon is widening its scope by the ideas she takes pains to acquire, or by the thought she herself originates, whose field of sympathies is broadening by becoming inclusive instead of exclusive—such a woman, such a character is interesting to any one, and the more so to one who knows her well and loves her truly.

It is possible to grow in affection, in heart-power, in spiritual perception and refinement, in goodness and in actual mental ability. Growth is only another name for motion, and motion always catches the eye and rivets the attention. It awakens and holds interest. It is the woman whose character is at a standstill who ceases to hold the interest of her husband, not the woman constantly in motion toward the higher things.—Margaret E. Sangster in Collier's Weekly.

Women's Wrongs.

TO THE EDITOR:—Henry B. Blackwell, the well-known writer, in discussing the cruel injustice being done to Boston women, which consists in the fact that each and every one of them is subjected to arrest by any policeman who sees fit to prefer a charge against her, says: "Women are often fined and imprisoned upon general principles without any specific proof of wrong-doing."

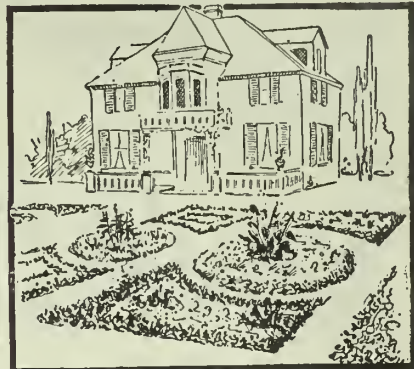
In view of this shocking perversion of justice will any woman continue to say, "I have all the rights I want"? This scandalous disregard of their personal rights, and of the accepted common law principle that every person is presumed innocent until proved guilty, is a striking evidence of the wrongs to which any class of citizens is subjected in a so-called republic when denied political representation. MRS. WM. KEITH.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Jan. 31, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	Jan.	May.
Wednesday.....	64 1/4 @ —	67 3/4 @ 66 1/2
Thursday.....	64 1/4 @ 64 1/2	66 1/2 @ 67 1/2
Friday.....	63 1/2 @ 66 1/2	67 1/2 @ 68 1/2
Saturday.....	66 1/2 @ 66	68 1/2 @ 68 1/2
Monday.....	66 1/2 @ 67 1/2	68 1/2 @ 69 1/2
Tuesday.....	65 1/2 @ —	68 1/2 @ 67 1/2

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday.....	5s 9 1/2 d	5s 8 1/2 d
Thursday.....	5s 9 1/2 d	5s 7 1/2 d
Friday.....	5s 9 1/2 d	5s 9 1/2 d
Saturday.....	5s 10 1/2 d	5s 9 1/2 d
Monday.....	5s 10 1/2 d	5s 10 1/2 d
Tuesday.....	5s 11 d	5s 10 1/2 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 00 1/4 @ 1 00 1/4	1 04 1/4 @ 1 04 1/4
Friday.....	1 01 1/4 @ 1 02 1/2	1 05 @ 1 06
Saturday.....	1 02 1/4 @ 1 02 1/2	1 06 1/4 @ 1 06 1/2
Monday.....	1 02 1/4 @ 1 04	1 06 1/4 @ 1 08
Tuesday.....	1 02 1/4 @ 1 01 1/2	1 06 1/4 @ 1 05 1/2
Wednesday.....	1 00 1/4 @ 1 01 1/2	1 04 1/4 @ 1 05 1/2

WHEAT.

The market for wheat, both here and abroad, has been up and down since date of last review, and at this writing (Wednesday) shows little difference from the condition of a week ago, so far as obtainable prices are concerned, but there is a slightly firmer tone. At the close of last and the beginning of this calendar week the speculative markets were quite strong, particularly on Monday, the strength being based on advices of ports in Argentine being closed on account of bubonic plague, and also on account of prospects of a heavy decrease in the French crop. The speculative market broke Tuesday, just as though there had never been any bubonic plague and as though the French crop and the crop of all other wheat countries would be first-class. Such ups and downs have been frequent in the past, and there is likely to be a repetition of the experience in the future. Stiff ocean freights are handicapping the local market, 37s per ton having been paid this week for iron ships, usual option. At the close \$1 per cental was utmost obtainable for choice shipping delivered alongside.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, \$1.00 1/4 @ 1.04.
December, 1900, delivery, \$1.04 1/4 @ 1.08.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at \$1.00 1/4 @ 1.01 1/2; December, 1900, \$1.04 1/4 @ 1.05 1/2.

California Milling.....	\$1 00 @ 1 05
Cal. No. 1 shipping, alongside.....	97 1/2 @ 1 00
Oregon Valley.....	92 1/2 @ 1 00
Walla Walla Blue Stem.....	92 1/2 @ 1 02 1/2
Walla Walla Club.....	82 1/2 @ 1 00
Off qualities wheat.....	80 @ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	s-d @ s-d	6s3d @ 6s3 1/2 d
Freight rates.....	25 @ 27s	36 1/4 @ 37s
Local market.....	\$1 12 1/4 @ 1 15	97 1/2 @ 1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

The market is showing more firmness, in sympathy with the improved feeling recently developed in wheat. Prices for flour, however, did not recede to as correspondingly low levels as wheat values, hence it is natural that they should be slower in moving upward. Spot stocks are not very heavy and are not likely to prove so very soon.

Superfine, lower grades.....	32 @ 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

Although quotable values are without material change, the market has been ruling moderately firm, with fair demand for export and also for local use. Large operators are not inclined to purchase freely, however, at full current rates. The export movement promises to continue

late in the season. Ships have been added to the grain-leading fleet the past week with the privilege granted the charterer of loading barley. Speculative market showed increased strength, but not much activity.

Feed, No. 1 to choice.....	75 @ 77 1/2
Feed, fair to good.....	60 @ 72 1/2
Brewing, No. 1 to choice.....	87 1/2 @ 97 1/2
Chevalier, No. 1 to choice.....	1 00 @ 1 07 1/2
Chevalier, No. 2.....	— @ —

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

Seller, 1900, new, — @ —.
May, 1900, delivery, 70 @ 72c.
December, 1900, delivery, — @ —c.

Wednesday, at regular noon session of the Call Board, May, 1900, feed sold at 70 @ 70 3/4c.

OATS.

Values have been ruling steady since last review, with arrivals and offerings of only moderate volume. Demand was not brisk at full current rates, but it was the exception where any disposition was shown to crowd offerings to sale at the expense of making special concessions, unless of particularly undesirable and inferior qualities.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 15 @ 1 22 1/2
White, poor to fair.....	1 07 1/2 @ 1 12 1/2
Gray, common to choice.....	1 10 @ 1 20
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	90 @ 1 02 1/2
Red.....	95 @ 1 20

CORN.

Market for this cereal continues in all essential respects much the same as previously noted. Spot supplies are mainly Large Yellow and White imported from the East, and values for same show steadiness. Domestic Small Yellow is obtainable only in a retail way.

Large White, good to choice.....	1 02 1/2 @ 1 05
Large Yellow.....	1 02 1/2 @ 1 05
Small Yellow.....	1 40 @ 1 45
Eastern Mixed.....	1 00 @ 1 02 1/2

RYE.

Business is of a light order, but at generally unchanged values. There is not much coming forward or on hand.

Good to choice, new.....	1 02 1/2 @ 1 05
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BUCKWHEAT.

Values for this cereal remain largely nominal, owing to trade being of insignificant proportions.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

Strength is still more pronounced in the bean market than at date of former review. There is every indication that conditions will continue favorable for sellers during the balance of the season. Stocks and offerings of all varieties are light, especially of choice to select qualities. As for some weeks past, white beans are receiving the most attention, the demand being largely on Eastern account.

Pea, fair to good, 100 lbs.....	3 10 @ 3 35
Small White, good to choice.....	3 10 @ 3 25
Lady Washington.....	2 90 @ 3 10
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 50 @ 2 60
Bayos, good to choice.....	3 25 @ 3 50
Reds.....	3 75 @ 4 00
Red Kidneys.....	3 00 @ 3 50
Limas, good to choice.....	5 00 @ 5 15
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

DRIED PEAS.

Very few are coming forward at present. Choice of either variety could be readily placed at current quotations.

Green Peas, California.....	2 00 @ 2 15
Niles Peas.....	2 00 @ 2 15

WOOL.

There is some movement in scoured stock Eastward, mainly of lots contracted for some weeks ago. Beyond this there is virtually nothing doing at present, and this state of affairs bids fair to continue until the opening of the spring season, or until about the middle of March. Prospects continue favorable for an active demand for spring wools at comparatively good prices.

Oregon Eastern, choice.....	13 @ 16
Oregon Eastern, fair to good.....	11 @ 13
Oregon Valley.....	17 @ 20

FALL.

Humboldt and Mendocino.....	16 @ 17 1/2
Middle Counties, defective.....	9 @ 12
Northern, free.....	11 @ 14
Northern, defective.....	9 @ 11
Southern Mountain.....	9 @ 11
San Joaquin Plains.....	— @ —
San Joaquin Lamh.....	— @ —

HOPS.

Market is exceedingly quiet and is fully as unfavorable to the producing and sell-

ing interest as at any previous date this season. Dealers are willing to make purchases at prices of their dictation, which are at a decidedly low range, and as a rule are less than cost of production.

Good to choice, 1899 crop.....	6 @ 9
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HAY AND STRAW.

Market for hay has been in very unsatisfactory condition for the selling interest since last review, with increased arrivals and no improvement in the demand. Quotations are based mainly upon asking rates the current week, selling prices being generally irregular, especially for the ordinary run of offerings, and averaged less than preceding week. Straw market was quiet and easy in tone.

Wheat.....	6 50 @ 9 00
Wheat and Oat.....	6 50 @ 8 50
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	6 00 @ 7 50
Stock.....	4 50 @ 5 50
Compressed.....	6 50 @ 9 00
Straw, per bale.....	30 @ 45

MILLSTUFFS.

Bran and Middlings sold at practically unchanged figures, but the market showed firmness, although supplies were a little larger than previous week. Rolled Barley was in the main rather firmly held. Milled Corn was not in heavy stock and commanded fairly steady rates.

Bran, per ton.....	14 00 @ 14 50
Middlings.....	16 00 @ 18 50
Shorts, Oregon.....	13 50 @ 16 00
Barley, Rolled.....	16 00 @ 16 50
Cornmeal.....	23 00 @ 23 50
Cracked Corn.....	24 00 @ 24 50

SEEDS.

There is little business being transacted in seeds of any description, this being usually a quiet time in this department. Alfalfa is in moderate supply, and small orders are being received for the same from interior points. Quotable values throughout remain practically as last noted.

Mustard, Trieste.....	Per ctt. 3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25
Canary.....	Per lb. 3 1/4 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	7 @ 9

BAGS AND BAGGING.

The Grain Bag market shows little life, and is likely to continue inactive for several months to come. Prices for Calcuttas remain as before. A limited quantity of State Prison bags are being offered at \$5.65 per 100, single orders being limited to 2000 bags.

Calcutta Grain Bags, buyer June-July ..	6 1/4 @ —
Calcutta Grain Bags, spot.....	6 1/4 @ —
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ —
State Prison Bags, per 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/4 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/2
Fruit Sacks, cotton.....	6 1/4 @ 7 1/4

HIDES, PELTS AND TALLOW.

The Hide market has been inclining downward for wet salted. Dry stock remains quotable as before. Pelts are commanding steady figures. Prices for Tallow are being in the main well maintained.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11½	10½
Medium Steers, 48 to 56 lbs.....	10½	9½
Light Steers, under 48 lbs.....	10	9
Heavy Cow Hides, over 60 lbs.....	10½	9½
Light Cow Hides, under 50 lbs.....	10	9
Wet Salted Klp.....	10	9
Wet Salted Veal.....	10	9
Wet Salted Calf.....	11	10
Dry Hides.....	18	14
Dry Klp and Veal, 11 to 16 lbs.....	17	13
Dry Calf, under 4 lbs.....	18	15
Salted Horse Hides, large.....	2 50	@ —
Salted Horse Hides, medium.....	2 00	@ —
Salted Horse Hides, small.....	1 00	@ —
Dry Horse Hides, large.....	2 00	@ —
Dry Horse Hides, small.....	75	@ 1 00
Dry Colts' Hides.....	50	@ 75
Pelts, long wool, per skin.....	1 00	@ 1 25
Pelts, medium, per skin.....	70	@ 90
Pelts, short wool, per skin.....	35	@ 60
Pelts, shealing, per skin.....	20	@ 35
Deer Skins, best summer.....	27½	@ 30
Deer Skins, good medium.....	20	@ 22½
Deer Skins, thin winter.....	—	@ 10
Elk Hides.....	10	@ 12
Tallow, good quality.....	4½	@ 5
Tallow, No. 2.....	4	@ 4½
Goat Skins, perfect.....	30	@ 37½
Goat Skins, damaged.....	10	@ 20
Kid Skins.....	5	@ 10

HONEY.

Market is of necessity quiet, owing to the very limited supplies of either Comb or Extracted, and these almost wholly at present in the hands of jobbers. Values

are being sustained at previously quoted range.

Extracted, White Liquid.....	7 1/2 @ 8
Extracted, Light Amber.....	7 @ 7 1/2
Extracted, Amber.....	6 @ 5 1/2
White Comb, 1 lb frames.....	11 1/4 @ 12 1/4
Amber Comb.....	8 @ 10

BEESWAX.

There are no stocks of consequence on the spot and very little offering to arrive. Market is quiet but firm.

Good to choice, light, per lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Market for Beef has developed no changes of importance since last review, remaining steady. Veal is arriving in increased quantity but continues to sell to fair advantage. Mutton is ruling tolerably steady. Lamb is still high and is not likely to be very cheap this Spring. Hogs are in fair receipt, but demand is sufficient to prevent any weakening of values.

Beef, first quality, dressed, net per lb.....	6 1/4 @ 7
Beef, second quality.....	6 1/4 @ —
Beef, third quality.....	5 1/2 @ 6
Mutton—ewes, 7 1/2 @ —; wethers.....	7 1/2 @ 8
Hogs, hard grain fed, medium.....	5 1/2 @ 5 1/2
Hogs, small, fat.....	5 1/2 @ 5 1/2
Hogs, large, hard.....	5 @ 5 1/2
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ 5 1/2
Hogs, country dressed.....	5 1/2 @ 6
Veal, small, per lb.....	7 @ 9 1/2
Veal, large, per lb.....	7 @ 8
Lamb, spring, per lb.....	15 @ —

POULTRY.

A better demand was experienced for nearly all kinds of poultry than during previous week, the Chinese being heavy buyers on account of the celebration of their New Year. Free receipts of Eastern prevented prices advancing materially, but the market, nevertheless, was firmer than last quoted, offerings as a rule moving more promptly and at better average figures.

Turkeys, dressed, per lb.....	12 @ 15
Turkeys, live hens, per lb.....	11 @ 12 1/2
Turkeys, live gobblers, per lb.....	11 1/4 @ 12 1/4
Hens, California, per dozen.....	3 50 @ 4 50
Roosters, old.....	4 00 @ 4 50
Roosters, young (full-grown).....	4 50 @ 5 00
Fryers.....	4 00 @ 4 50
Broilers, large.....	4 00 @ 4 50
Broilers, small.....	3 00 @ 3 50
Ducks, per dozen.....	4 00 @ 5 00
Geese, per pair.....	1 75 @ 2 00
Goslings, per pair.....	1 75 @ 2 00
Pigeons, old, per dozen.....	1 25 @ 1 50
Pigeons, young.....	2 50 @ 3 00

BUTTER.

Rather light receipts, a fair shipping demand, and strife among commission houses to secure the output of certain creameries and dairies, have combined to make a firm and higher market. The recent cold weather has been a factor of no small consequence in shaping present conditions by greatly restricting the production.

Creamery, extras, per lb.....	28 @ 29
Creamery, firsts.....	26 @ 27
Creamery, seconds.....	24 @ 26
Dairy, select.....	24 @ 26
Dairy, seconds.....	20 @ 23
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 16
Creamery in tubs.....	18 @ 21
Pickled Roll.....	— @ —
Firkin, California, choice to select.....	19 @ 23
Firkin, common to fair.....	16 @ 18

CHEESE.

Market continues to present an easy tone for now cheese, which is at present in better supply than old. Receivers are anxious to keep stocks of now cleaned up as closely as possible, and are consequently granting concessions rather than miss sales to desirable custom.

California, fancy flat, new.....	11 @ —
California, good to choice.....	10 @ 10 1/2
California, fair to good.....	9 1/2 @ 10
California Cheddar.....	— @ —
California, "Young Americas".....	10 @ 12

EGGS.

There has been no firmness in the egg market the current week. Stocks were not very heavy but were ahead of the demand. Practically all the eggs now arriving from the interior are showing good quality and there is in consequence a rather narrow range in values. Many dealers are giving store-gathered eggs the preference on account of the price being lower than for eggs direct from henry or ranch.

California, select, large, white and fresh.....	20 @ —
California, select, irregular color & size.....	17 @ 19
California, good to choice store.....	16 @ 17
Eastern, as to section and grading.....	— @ —
Eastern, cold storage.....	13 @ 15

VEGETABLES.

Market for most of the vegetables now arriving or offering continued on much the same lines as preceding week. Onions met with a steady market, particularly those which were hard, sound and uncut. Early spring vegetables were not in heavy re-

ceipt and desirable qualities brought good prices.

Beans, String, # lb.....	6 @ 8
Cabbage, choice garden, # 100.....	50 @ —
Cauliflower, # dozen.....	50 @ —
Egg Plant, # lb.....	12 1/2 @ 15
Garlic, # lb.....	5 @ 6
Onions, Yellow, Cal., good to choice. 1 25 @ 1 75	
Onions, Oregon, # cental.....	1 50 @ 2 00
Peas, Sweet, garden, # lb.....	2 1/2 @ 3 1/2
Peppers, Green Chile, # lb.....	4 @ 5
Peppers, Bell, # lb.....	— @ —
Rhubarb, # box.....	— @ —
Squash, Marrowfat, # ton.....	— @ —
Squash, Summer, # box.....	75 @ 1 00
Tomatoes, Los Angeles, # box.....	1 25 @ 1 75
Tomatoes, Bay, # box.....	— @ —

POTATOES.

There have been further tolerably heavy arrivals from Oregon since last review, giving the market a weak tone, and causing buyers to hold off as much as possible. There were no heavy declines in values, however, and none anticipated in the near future. Sweets ruled firmer, offerings being hardly equal to requirements.

Burhanks, River, # cental.....	65 @ 1 00
Burhanks, Bay counties, # cental.....	— @ —
Burhanks, Humboldt.....	90 @ 1 10
Burhanks, Oregon.....	80 @ 1 15
River Reds.....	— @ —
Burhanks, Salinas, # cental.....	1 25 @ 1 40
Early Rose.....	90 @ 1 00
Garnet Chile.....	85 @ 1 00
New Potatoes, # lb.....	1 1/2 @ 2
Sweet, River, # cental.....	— @ —
Sweet Merced.....	1 75 @ —

The Fruit Market.

FRESH FRUITS.

The Apple market shows no important changes, the range of values remaining as last quoted. Stocks are light, especially of choice to select, with inquiry mainly for high-grade fruit, and some sales of the same above quotable rates. While common qualities are not plentiful, prices for such stock continue low, bids being limited and buyers few. Apples are the only fresh deciduous fruit now offering.

Apples, fancy, 4-tier box.....	1 50 @ 1 75
Apples, good to choice, # 50-lb box.....	75 @ 1 25
Apples, common to fair, # 50-lb box.....	25 @ 50

DRIED FRUITS.

There has been an exceedingly quiet market the past week for cured and evaporated fruits of all kinds. Conditions were not favorable for the exertion of selling pressure, especially on Prunes, Peaches, Apples and Figs. Immediate supplies are composed largely of above descriptions. Quotable rates on Peaches have been cut down half a cent. Quotations for Figs show a reduction of about a cent for White pressed and half a cent on ordinary. The weakness of the Prune market is confined, as for some time past, principally to the large sizes. With undue selling pressure, current quotations could not be realized. Should there be a fair inquiry, however, which is likely to be experienced in the early spring, and perhaps sooner, buyers may find it necessary to pay firmer figures than are now nominally current.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb.....	10 1/2 @ 12
Apricots, Royal, fancy.....	12 1/2 @ 13
Apricots, Moorpark.....	13 @ 15
Apples, in 50-lb boxes, rings, pressed, fancy.....	7 1/2 @ —
Apples, 50-lb boxes, rings, pressed, good to choice.....	6 @ 7
Figs, White, fancy pressed.....	5 1/2 @ 5 1/2
Peaches, unpeeled, good to choice.....	6 @ 7
Peaches, unpeeled, fancy.....	7 1/2 @ 8
Peaches, peeled, in boxes.....	12 1/2 @ 15
Pears, unpeeled Bartlett's, halved, fancy. 9 @ 10	
Pears, halved, unpeeled Bartlett's.....	6 1/2 @ 8
Pears, quartered, unpeeled Bartlett's.....	6 1/2 @ 7 1/2
Plums, Black, pitted.....	6 1/2 @ 7 1/2
Plums, White and Red.....	7 @ 8
Prunes, in sacks 40-50s.....	4 @ 4 1/2
50-60s.....	3 1/2 @ 3 3/4
60-70s.....	3 1/4 @ 3 1/2
70-80s.....	3 1/4 @ —
80-90s.....	3 @ —
90-100s.....	2 1/2 @ —
110-130s.....	2 @ —
Prunes in boxes, 1/2 c higher for 25-lb boxes, 1/2 c higher for 50-lb boxes.	
4 sizes Santa Claras and equal.....	2 1/2 @ —
4 sizes San Joaquin and Northern.....	2 1/2 @ 2 1/2
Prunes, Silver.....	4 @ 7

COMMON SUN-DRIED.

Apples, sliced.....	4 @ 5
Apples, quartered.....	4 @ 5
Figs, Black.....	— @ 3
Figs, White.....	3 @ 3 1/2
Peaches, unpeeled.....	5 @ 6

RAISINS.

No new features have been developed in the Raisin market since last review. Quotable rates as fixed by the Growers' Association remain as previously noted. Offerings are light, and include very few choice or high grade goods.

F. O. B. FRESNO DELIVERY.

London Layers, 6-crown, # box.....	— @ —
do do 5-crown, # box.....	— @ —
do do 4-crown, # box.....	— @ —
do do 3-crown, # box.....	1 60 @ —
do do 2-crown, # box.....	1 50 @ —
Valencia Layers, # 20-lb box.....	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6 1/2 @ —
Loose Muscatel, seedless.....	5 @ —
Pacifics.—2-crown loose Muscatel, 5 1/2 c; 3-crown, 6 c; 4-crown, 6 1/2 c; seedless, 4 1/2 c.	
Oriental.—2-crown loose Muscatel, 4 1/2 c; 3-crown, 5 1/2 c; 4-crown, 6 c.	
(Above prices for loose raisins are for 50-lb. boxes.)	
Thompson Seedless.—Bleached fancy, # lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.	
Sultanas.—Bleached fancy, # lb., 8 1/2 c; choice, 7 1/2 c; standard, 6 1/2 c; prime, 5c. Unbleached, 5c.	
Loose Valencia.—Fancy, # lb., 5 1/2 c; choice, 4 1/2 c; standard, 3 1/2 c.	
Valencia Clusters.—Fancy, # lb., 7c; choice, 6c; standard, 5c.	

CITRUS FRUITS.

Continued cool weather and tolerably heavy offerings of Oranges, both at auction and by private sale, have rendered the market weak for this fruit, with values at a lower and narrower range than last quoted. Lemon market is more favorable to buyers than at date of last review and movement is far from brisk. Limes were firmly held, supplies being light.

Oranges—Navels, # box.....	1 25 @ 2 50
California Seedlings.....	50 @ 1 00
California Mandarin, # small box.....	40 @ 60
Grape Fruit, # box.....	1 00 @ 2 00
Lemons—California, select, # box.....	1 75 @ 2 00
California, good to choice.....	1 25 @ 1 50
California common to fair.....	50 @ 1 00
Limes—Mexican, # box.....	5 00 @ —
California, small box.....	75 @ 1 00

NUTS.

Quotable values are without change, but in Almonds and Walnuts there is virtually nothing doing. Peanuts are in light stock and fair request at prevailing rates.

California Almonds, shelled.....	17 @ 20
California Almonds, paper shell, # lb.....	11 @ 12
California Almonds, soft shell.....	10 @ 11
California Almonds, hard shell.....	6 @ 7
Walnuts, White, soft shell.....	10 @ 11
Walnuts, White, California, standard.....	9 @ 10
Chestnuts, California Italian.....	9 @ 10
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	6 @ 6 1/2
Pine Nuts.....	5 @ 5 1/2

WINE.

Quotable rates for dry wines of 1899 remain as last noted, 15 @ 18c. per gallon, as to quality, San Francisco delivery. Neither buyers nor sellers are disposed as a rule to crowd business. Large operators are holding off the market, hoping to be able to purchase to better advantage later on. In other words, they are trying the tiring out process, and instead of going after the producer, are waiting to have the producer come to them, so as to be able to dictate terms. As the crop is light, the buyers have not very good prospects of breaking the market. Monday's Panama steamer carried 196,099 gallons and 112 cases wine, 187,947 gallons being for New York, and 2,000 gallons for Germany.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/2 sacks.....	181,637	3,412,985
Wheat, centals.....	78,531	2,788,030
Barley, centals.....	24,374	4,076,663
Oats, centals.....	7,600	583,218
Corn, centals.....	1,200	90,719
Rye, centals.....	930	86,245
Beans, sacks.....	5,263	299,311
Potatoes, sacks.....	37,276	813,057
Onions, sacks.....	2,833	126,000
Hay, tons.....	2,672	103,841
Wool, hales.....	61	35,591
Hops, hales.....	48	8,560

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/2 sacks.....	252,084	2,200,391
Wheat, centals.....	118,324	2,445,556
Barley, centals.....	58,879	3,256,154
Oats, centals.....	473	27,335
Corn, centals.....	57	11,481
Beans, sacks.....	209	18,940
Hay, hales.....	3,044	70,632
Wool, pounds.....	108,186	3,764,781
Hops, pounds.....	50,892	816,656
Honey, cases.....	7	3,216
Potatoes, packages.....	48	48,763

California Dried Fruit at New York.

NEW YORK, Jan. 31.—California dried fruits: Fair demand; values steady. Evaporated apples, common, 6 @ 6 1/2 c; prime wire tray, 6 1/2 @ 7 c choice, 7 1/2 @ 8 c; fancy, 8 1/2 @ 9 c. Prunes, 3 1/2 @ 6 c. Apricots, Royal, 13 @ 15 c; Moorpark, 15 @ 18 c. Peaches, unpeeled, 7 1/2 @ 10 c; peeled, 20 @ 23 c.

THE canners have received quotations from the tin-plate trust, which show that it will cost them \$28.25 a thousand for cans this year. The price last year was \$14.50. It will be necessary, declared the convention of the Indiana State Canners' Association, to advance the price 16 cents a dozen to meet this rise in tin.

Consolidation of Two Firms in Sacramento.

The pioneer firm of Stanton & Thompson, one of the leading dealers of agricultural implements and hardware in northern California, and the Diggs Vehicle & Implement Co. of Sacramento have consolidated under the name of Diggs-Thompson Implement Co. This new concern has opened a large store at the old headquarters, 308 to 312 J street, Sacramento, and will carry a stock of goods in vehicles and farm implements and agricultural machinery.

THE Acme pulverizing harrow, clod crusher and leveler, manufactured by Duane H. Nash, Millington, N. J., and Chicago, Ill., is stated by its manufacturer to be able to crush, cut, lift, pulverize, turn, aerate and level the soil at one operation. It is manufactured entirely of cast steel and wrought iron. The manufacturer offers to send the Acme to any responsible farmer anywhere on trial, same to be returned at his expense if not found entirely satisfactory, and asks anyone interested to write for catalogue, prices and free booklet, "An Ideal Harrow."

STATE OF OHIO, CITY OF TOLEDO, ss.

LUCAS COUNTY,
FRANK J. CHEYNEY makes oath that he is the senior partner of the firm of F. J. CHEYNEY & CO., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of CATARRH that cannot be cured by the use of HALL'S CATARRH CURE.
Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1899.

A. W. GLEASON,
Notary Public.

Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.
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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR WEEK ENDING JAN. 16, 1900.

- 641,360.—AMALGAMATOR—L. H. Bar-
ricks, S. F.
641,359.—ORE SEPARATOR—J. Barron,
S. F.
641,490.—LIFTING JACK—A. Bauer,
Boyd, Or.
641,362.—HOISTING APPARATUS—H.
Behr, S. F.
641,367.—TURNING MECHANISM—G.
Brauer, Sacramento, Cal.
641,271.—PIPE WRENCH—J. H. Condy,
Stockton, Cal.
641,451.—WRENCH—W. T. Hatton, Can-
yon City, Or.
641,393.—MEAT HANGER—W. O. John-
son, Seattle, Wash.
641,597.—WATER HEATER—C. S. Kinney,
Arroyo Grande, Cal.
641,317.—TOOL HOLDER—R. S. Moore,
Oakland, Cal.
641,531.—COMB—W. P. Murphy, San
Jose, Cal.
641,606.—MIXER—V. J. A. Rey, S. F.
641,555.—GAS GENERATOR—A. F.
Shriver, Arbutle, Cal.
641,558.—OIL BURNER—S. Spillars, Pe-
mona, Cal.
641,652.—EXTRACTING GOLD—A. G.
Stephens, Los Angeles, Cal.
641,419.—AGITATOR—H. C. Wheeler,
Winchester, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

ELECTRIC AMALGAMATORS.—L. H. Barricks, San Francisco, Cal. No. 641,360. Dated Jan. 16, 1900. This invention relates to a device for separating gold and silver from pulp and ore with which they are associated. The object is to provide a means for increasing the activity of amalgamation of metals which can be thus effected. It consists of a metallic frame or body having a perforated plate secured to its bottom, a porous plate resting upon the metal plate forming a bottom upon which the mercury is placed, a pan or box upon which the frame or body is supported, adapted to contain a saline solution, a sluice connected with the frame above the porous plate and having a copper plate in the bottom dipping into the mercury and serving as a negative pole of an electric circuit, and a plate in the pan or box serving as the positive pole.

FRICTION WHEEL GRIP FOR ORE FEEDERS.—C. D. Hooper, Telluride, Colo. No. 641,390. Dated Jan. 16, 1900. This invention is designed to provide a friction wheel and gripping device which is connected with ore feeders so as to advance the latter by small impulses, and thus regulate the feed of ore from the hopper or receptacle to stamp or crushing mill. The wheel has a central web and flange extending some distance on each side thereof. A rectangular yoke of sufficient width encloses this flange and extends inwardly upon each side, and a block having approximately the width of the flange of the wheel is introduced between the flange and the inner wall of the cross bar of the yoke. Independent blocks are confined between the inner arms of the yoke, and the inner periphery of the flange by stub-bolts, and have a curvature substantially corresponding with that of the flange. The blocks rock on the bolts, and are caused to bind against the flange of the wheel when the lever arm of the yoke is moved in one direction, and they slip so as to allow the yoke to be moved with relation to the wheel when moved in the other direction. This movement is effected by connections, so that the falling of the stamp causes the tappet to act upon the lever arm connections and thus move the feed device.

TRUSS.—W. R. Close-Erson, Onehunga, New Zealand. No. 641,372. Dated Jan. 16, 1900. This truss is designed for the treatment of various forms of hernia, to minimize the discomfort and facilitate easy application and uniform pressure on the part or parts of the patient being treated, and a means for increasing or decreasing the pressure as circumstances require. The truss consists of a continuous flexible exterior covering, and a continuous hollow flexible tube which is adapted to be inflated. A stiffening and shaping plate occupies one side of the truss and pad, and is interposed between the inside tube and the exterior covering. By means of a belt and suitable connections these parts are properly supported.

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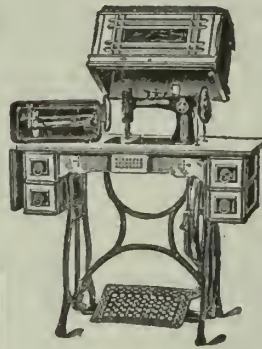
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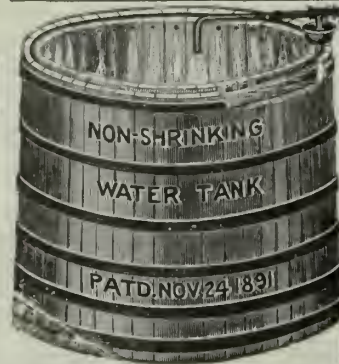
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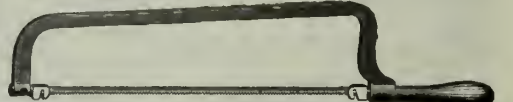
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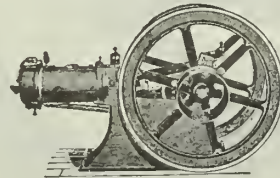
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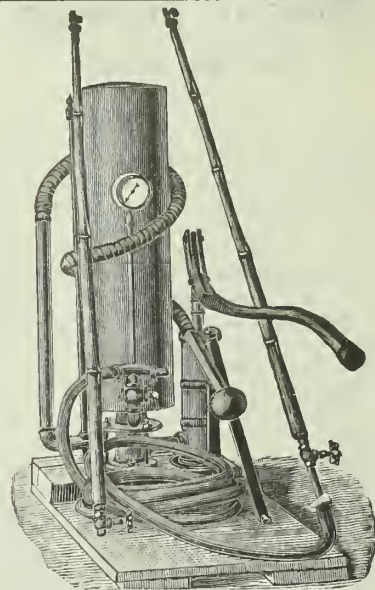
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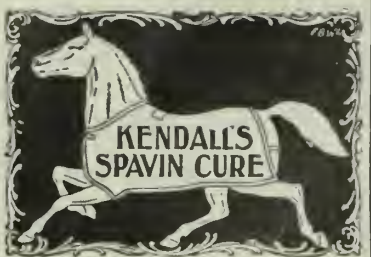
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Grass Valley Grange.

TO THE EDITOR:—Grass Valley Grange, N. 256, P. of H., initiated a class of five on Saturday evening, January 13th, or at least conferred the third and fourth degrees upon them, thus making them full-fledged Grangers in the subordinate lodge.

After partaking of the Harvest Feast with its accompaniment of merriment, etc., the new officers elected to serve during the present new year were installed by Worthy Master O. L. Twitchell, assisted by Brother E. W. Donnelly: Master, Frank W. Reed; Overseer, W. H. Bryan; Lecturer, Sister Mary Reed; Steward, Wallace Alderman; Assistant Steward, W. T. Merrill; Chaplain, Sister J. R. Willson; Treasurer, Mark Thornton; Secretary, Sister R. S. Twitchell; Gate Keeper, Walter Stockdale; Pomona, Sister Lynette Hughes; Flora, Sister Alice Reed; Ceres, Sister M. A. Coulton; Lady Assistant Steward elect to be installed later.

After the ceremonies necessary to the occasion were completed, a general good time was indulged in. The installation having been public, a considerable crowd of outsiders were present. Dancing, singing, also some recitations and dialogues passed the hours away pleasantly until the "wee sma' hours" warned us that Sunday was with us.

Now, Worthy Master of the California State Grange G. W. Worthen, our Grange is ready and waiting for the new annual word. We are square on the books, as a receipt for December quarterly dues is at hand from the Secretary of the State Grange.

By the way, what are all the different Granges about? So few lists of newly elected officers have been printed in the PACIFIC RURAL PRESS, which we have relied upon for news in that line. They ought to be coming in thick and fast during these last few weeks.

I hoped to see a column from the Master, Secretary and Lecturer of the State Grange—something for us to read at our lodge meetings. I received a postal informing me that I am a member of the Committee on Good of the Order. I feel honored and am anxious to do some good in reality, but what is the crying need of the Order? Let us discuss that!

R. S. T.

Grass Valley, Cal.

Action by the State Grange.

TO THE POMONA AND SUBORDINATE GRANGES OF CALIFORNIA:—Resolved, by the State Grange of California, P. of H., That this State Grange demands the immediate enforcement of the law passed in 1897, directing the establishment of a free public market on the State property bounded by Pacific, Davis and East streets, being the only State property available to be at once devoted to that use.

This was one of the particular objects

for which the Grange pledged itself to labor during the next two years, or until accomplished. The Grange is gaining in numbers and influence, and its voice should be heard throughout the land in advocating a prompt execution of our laws.

Let us not lose sight of that to which we have pledged our efforts. An expression from each Grange in the State is called for. Let each Secretary communicate with the chairman of the Legislative Committee. See page 112, Journal of Proceedings, 1899.

G. W. WORTHEN, Master.

San Jose Grange.

The meeting of the San Jose Grange, January 27th, says the Mercury, was one that will long be remembered in the annals of that body. The following were given the two final degrees and made members in full standing: Prof. and Mrs. J. F. Smith, Mr. and Mrs. Ralph Husted, Mrs. A. L. Sprung, P. S. C. Wills, L. E. Walters, W. F. Wright, D. H. M. Bryant, Fred S. Foster, Mrs. Helen Wright and J. J. Shaner.

Another class equally as large will be shown the mysteries in two or three weeks. It is the purpose of the Grange not to spend its time in the routine of degree work, but to devote as much of its sessions as possible to the more important consideration of agricultural questions that will materially benefit its membership.

Following the initiations, dinner was served in the dining-room. Justice being done to the repast, all returned to the lodge-room and listened to an impromptu programme made up of speeches by the new members, a vocal solo by Mrs. Baker and one by Miss Laura S. Woodhams.

Temescal Grange.

TO THE EDITOR:—Temescal Grange gave a very enjoyable birthday reception to Mrs. S. A. Whidden and Mrs. Kate McGrew Saturday afternoon at I. O. O. F. hall.

After the members and friends had partaken of a dainty collation, the following programme was rendered: Reading of selected poems by Mrs. S. J. Cross, Burdette Cornell and Mrs. D. Gilbert; address by Adelbert M. Dewey of Washington, D. C.; reading of one of Markham's latest poems by Charles Fowler.

Oakland, Jan. 22, 1900.

SPRAYING FRUIT TREES.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment but a necessity.



Our readers will do well to write Wm. Stahl, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contains much valuable information, and may be had for the asking.

A Prize for Incubator Users.

A prize of \$5 is offered by the Frank B. White Company, Chicago, for the best article, written by an incubator user, on the subject "Buying an Incubator." The company wants to ascertain how current incubator advertising strikes the average poultry man. What appeals to you most strongly in an incubator advertisement? What led you to purchase the incubator you now use? What claims have the most effect in influencing your decision? Each article must contain not less than 30 words or more than 400 words, and must be sent to Frank B. White Company, Fisher Building, Chicago, before Feb. 25. We trust some of our readers will secure this prize.

James J. H. Gregory & Son, Marblehead, Mass., have issued their 1900 catalogue. There are many new varieties shown, and improvements are pictured in numerous photographic reproductions. The florist will also find much of interest in the handsomely illustrated pages devoted to seeds and plants. Messrs. Gregory & Son warrant all their seeds, guarantee their safe arrival, prepay charges on all package-sales ordered for mailing, and say that the American Express Company will receive orders for Gregory seeds wherever that company has an office and will give a special rate, lower than their commercial billings.



Eureka Harness Oil is the best preservative of new leather and the best renovator of old leather. It oils, softens, blackens and protects. Use

Eureka Harness Oil

on your best harness, your old harness, and your carriage top, and they will not only look better but wear longer. Sold everywhere in cans—all sizes from half pints to five gallons. Made by STANDARD OIL CO.

Sacramento Valley Circuit.

Arrangements for a northern valley circuit are progressing favorably. At a meeting in Chico, as reported by the Enterprise, representatives of the six districts north of Sacramento were present: Messrs. White and Cutts of Marysville; D. S. Cone of Red Bluff; Merrill and Peart of Colusa; C. R. Hoppin of Woodland; Frank Freeman and H. Gutman of Willows. The Chico representatives present were: Messrs. Park, Henshaw, Cusick, Nichols, Williams and McIntosh, with Sec'y A. G. Simpson.

It was decided that the northern circuit should begin July 23rd at Colusa, continuing around the circuit and finishing up at Woodland, and according to this motion the following dates were named:

Colusa, July 23rd to 28th, inclusive.
Willows, July 30th to Aug. 4th, inclusive.
Red Bluff, Aug. 6th to 11th, inclusive.
Chico, Aug. 13th to 18th, inclusive.
Marysville, Aug. 20th to 25th, inclusive.
Woodland, Aug. 27th to Sept. 1st, inclusive.

The matter of arranging the speed programme was left to the directors of the Chico district, to be submitted later to the director of the other districts for their approval, the same to be returned by a representative at a joint meeting

FOR 14 CENTS

We wish to gain this year 200,000 new customers, and hence offer 1 Pkg. City Garden Beet, 10c
1 Pkg. Early Emerald Cucumber, 10c
1 " La Crosse Market Lettuce, 15c
1 " Strawberry Melon, 15c
1 " 14 Day Radish, 10c
1 " Early Ripe Cabbage, 10c
1 " Early Diner Onion, 10c
3 " Brilliant Flower Seeds, 15c
Worth \$1.00, for 14 cents. \$1.00

Above 10 Pkgs. worth \$1.00, we will mail you free, together with our great Catalog, telling all about SALZER'S MILLION DOLLAR POTATO upon receipt of this notice & 14c. stamps. We invite you to trade, and know when you once try Salzer's seeds you will never do without.

\$200 Prizes on Salzer's 1900—ran out earliest Potato Giant on earth. P. 9 JOHN A. SALZER SEED CO., LA CROSSE, WIS.

AMERICAN GARDENING.

Ten Sample Copies, separate issues, 10 cents. Published at 136 Liberty Street, New York.

HAWKEYE GRUB AND STUMP MACHINE

Works on either Standing Timber or Stumps. Pulls an Ordinary Grub in 1 1/2 Minutes. Makes a Clean Sweep of Two Acres at a Sitting. A man, boy and a horse can operate it. No heavy chains or rods to handle. You can no longer afford to pay for an unproductive timber land. Illustrated catalogue free, giving prices, terms.

MILNE MFG. CO., 352 8th St., Monmouth, Ill. Address Milne Bros. for SHETLAND PONY Catalogue.

Kansas Standard TOMATO Best Novelty Out. A Money Maker. One packet, 25c.; three packets 50c. Specialties: Alfalfa, Kafir Corn, Siberian Millet, Forage Plants for arid regions, Onion Seed and Onion Sets. Large stock of tree seeds. Elegant catalog mailed free on application. Write for one NOW. KANSAS SEED HOUSE, F. Barteldes & Co., Lawrence, Kan.

California Fruits.

NEW EDITION (3rd)

By E. J. WICKSON,

Price \$2.50, Postpaid Anywhere.

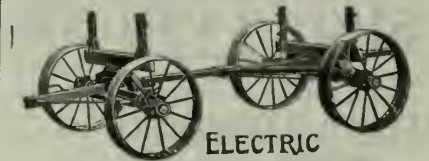
PACIFIC RURAL PRESS, Publishers,
330 Market Street, San Francisco, Cal.

to be held in Chico on February 17th. Thus the programmes at each meeting will be the same.

In the matter of purses the horsemen will have no cause for complaint, as the purses to be hung up will be very liberal.

Farm Wagon Economy.

The economy of this proposition is not all found in the very reasonable price of the wagon itself, but in the great amount of labor it will save, and its great durability. The Electric Wheel Co. who make this Electric Handy Wagon and the now famous Electric Wheels, have solved the problem of a successful and durable low down wagon at a reasonable price.



ELECTRIC

This wagon is composed of the best material throughout—white hickory axles, steel wheels, steel bounds, etc. Guaranteed to carry 400 lbs. These Electric Steel Wheels are made to fit any wagon, and make practically a new wagon out of the old one. They can be had in any height desired and any width of tire up to 8 inches. With an extra set of these wheels a farmer can interchange them with his regular wheels and have a high or low down wagon at will. Write for catalogue of the full "Electric Line" to Electric Wheel Co., Box 10, Quincy, Ill.

I HAVE TO OFFER LOGANBERRIES.

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About 2000 Hard Shell or Bitter Almond Seedlings.

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GRAFTING WOOD \$1 PER FOOT.

Burbank's CLIMAX Plum,
GRAFTING WOOD 25c PER FOOT.

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Pacific Steel Handy Wagon.

WHEELS.....28 and 31 inches high.
TIRES.....4 and 5 in. wide, 1/4 in. thick.
AXLES.....1 1/2 inch, solid steel.
BOLSTERS AND AXLE STOCKS...White oak.
CAPACITY.....Guaranteed 5000 lbs.

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16-18 DRUMM ST., SAN FRANCISCO.

Made by The Shunk Plow Co., Bucyrus, O.

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DORMANT BUDS ALL SOLD.

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CLIMAX PLUM TREES.

One year old, ALL SIZES. Two to ten feet high, straight, well branched and well rooted.

BARTLETT PLUM.

TREES one year old, straight and handsome.

DORMANT BUDS of SULTAN and SHIRO. GRAFTING WOOD OF ALL.

PINEAPPLE QUINCE CUTTINGS and very few trees, two years old. None of mailing size left.

Have all your unprofitable trees regrafted. CHANGE THEM FROM CONSUMERS TO PRODUCERS.

BEGIN the new century with NEW CENTURY FRUITS.

A postal card will bring you price list.

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LUTHER BURBANK.

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Fertility,
Fortune.

ECONOMIZE by keeping your land in FULL CULTIVATION, and obtain HEAVY YIELDS by using

THOMAS' PHOSPHATE POWDER
(Basic Slag).

NOW IS THE TIME TO APPLY.

Unsurpassed as a Phosphate for Fruits, Grain, Potatoes, and Roots. Encourages the Growth of Clover, and Improves the Herbage Generally.

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316 California Street, - - - San Francisco, Cal.

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as a fertilizer. Apply just when the beets are getting well started in the row. The results will surprise you.

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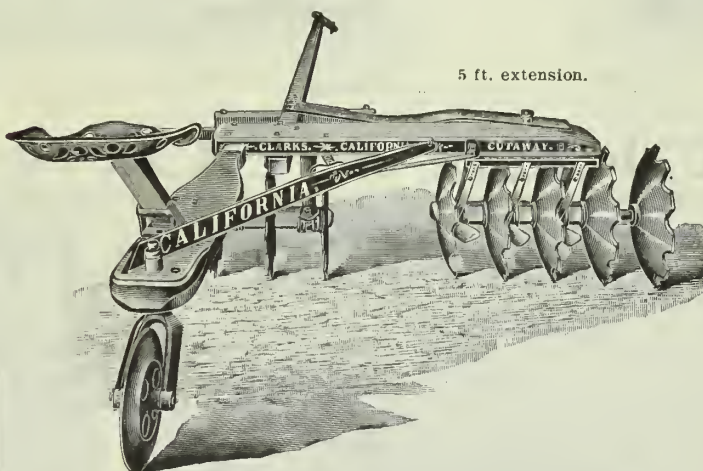
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Write Us for Prices and Illustrated Pamphlet. WE PAY THE FREIGHT.

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CALIFORNIA CUTAWAY ROTARY REVERSIBLE ORCHARD PLOW.

DON'T worry. The California will take care of the WEEDS all right—kill 'em, BIG AND LITTLE—cut 'em to pieces and mix 'em with the soil. Land prepared with the California will NOT BAKE, CRACK AND DRY OUT. No lumps, no clods, land always level.

Use up-to-date orchard tools and you will make MONEY growing fruit. Write for catalogue, testimonials and price.

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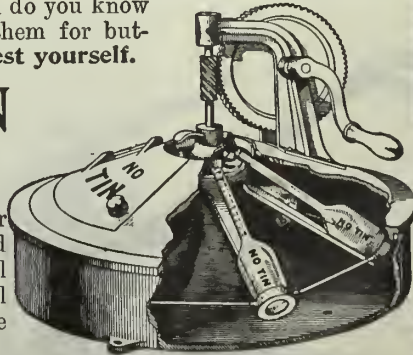
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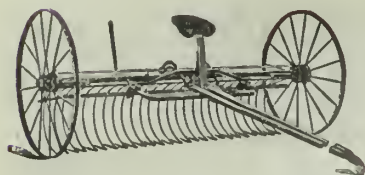
It uses the ordinary Babcock bottle and it does accurate work. Send now for our Catalogue, No. 70.

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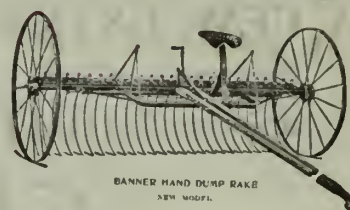
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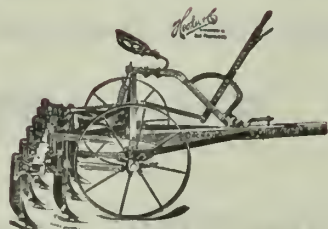
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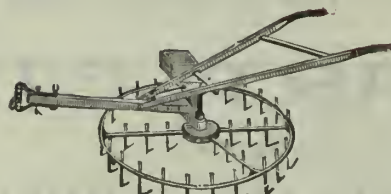
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NEW MODEL



ECLIPSE CULTIVATOR



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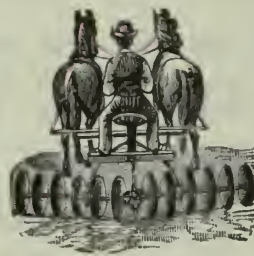
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NEW MODEL



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PACIFIC REVERSIBLE DISC HARROW



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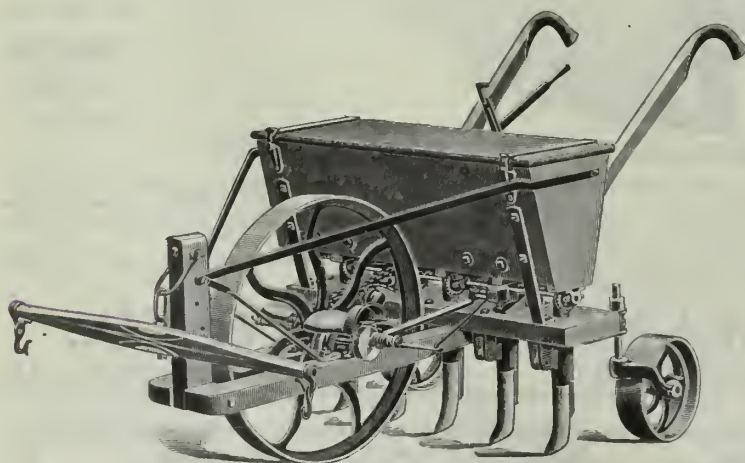
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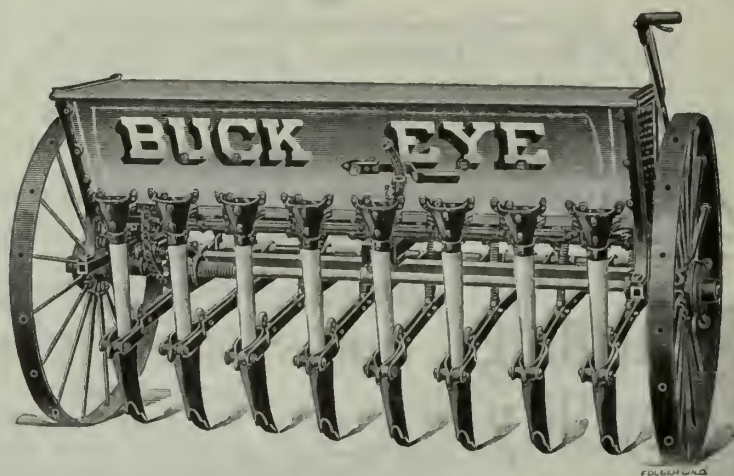
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Commercial Fer-
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in any desired
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WHATEVER.

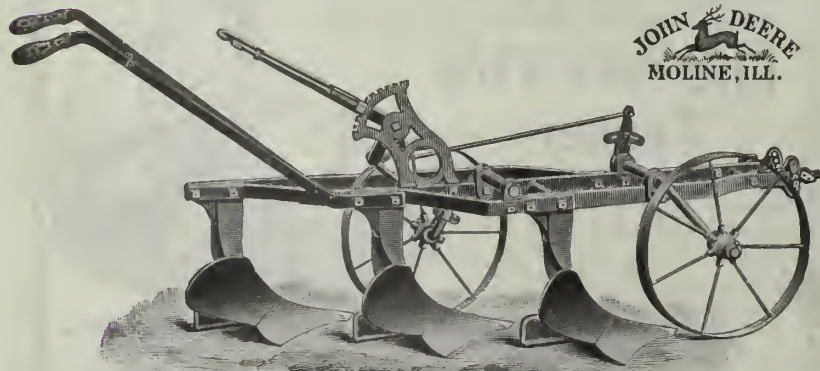
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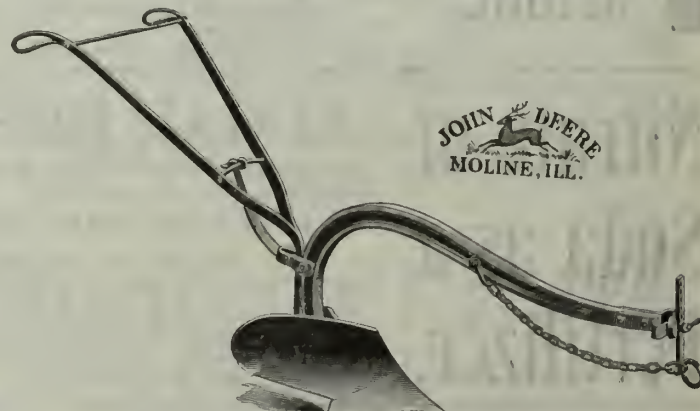
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DEERE "PONY" GANG.

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STRENGTH,
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SERVICE,
Our
ORCHARD
and
VINEYARD
PLOWS
are
ALL.....
RIGHT....



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STEEL BEAM. ADJUSTABLE HANDLES.

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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 6.

SAN FRANCISCO, SATURDAY, FEBRUARY 10, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Features of the Foothills.

The foothill region of California is proverbial for its picturesqueness and for its industrial importance as well. It was the scene of the earliest mining activity and to the recent progress in the same line there has been added, as our readers know, a most creditable agricultural and horticultural progress. The development of the foothill region, great as have been the achievements of the last twenty years, is still at its beginning and the future has greater triumphs in store for it.

We have on this page a grouping of camera products which is suggestive of foothill progress in some ways. We have laid aside foothill orchard and vineyard scenes for some future occasion and follow another line. The first view is suggestive of the picturesqueness of the foothill slopes with their rich vesture of native growths—forest trees and shrubbery and herbaceous plants—all of which at their proper seasons adorn the rocky hillsides with forms and colors of surprising novelty and beauty, and convey to the overland tourist the first assurance that he is in a country of new charms and delights. One who approaches California at this time of the year and is dropped almost without warning from the snows of the Sierra Nevada to the sunshine and verdure of the foothills gains an impression of California's unique characters which is never effaced, though the factors producing the impression may become trite and familiar afterwards. We doubt if any one ever entered the foothills in this way on a sunny day in winter without the thought that if California has anything lovelier to show it must be the gateway to paradise.

Two other views give a contrast in point of foothill habitations. These are not, of course, exponent of the beautiful cottages and villas which are so abundant in the fruit districts of the foothills, but are suggestive of the



A Rocky Ledge in the Foothills.

picturesque amid the natural environment of the foothills. In them there is an indication of foothill development, for the first view shows a rude cabin such as the miner or lumberman or even the early settler for agricultural purposes might hastily construct for temporary shelter, while the second is the habitation of a later day, with its glazed windows, sheltered roof and professional carpentry. Both are, however, picturesque in their outlines and environment and will be good subjects for our younger readers who desire practise with their pencils and brushes. It is about such as these that foothill romances are woven and it must be acknowledged that they comport better with such uses than the smart houses which permanent settlement and wealth-winning has scattered over the more populous of the foothill regions.

Two more pictures show how the little foothill town steals in upon the foothill slopes and establishes itself. We do not claim that the slope looks any better for its acquisition of board structures; probably the nature lover would delight more in the rock masses which occupy the central ground in the picture on the left. But it must be remembered that, after all, man is the greatest thing in the world and his progress in the reclamation of the earth for mankind is the greatest movement in the world, even if in its earlier phases it may mar landscapes without giving anything tasteful or beautiful in exchange for their loveliness. One



An Early Foothill Habitation.



A Later Type of Foothill Dwellings.



A Glimpse at a Foothill Farm.



The Beginnings of a Foothill Town.

has to be patient, for better things come later. Some of the older towns of the foothills have become models of urban beauty. They nestle amid their picturesque environment, and by their trimness the fitting character of their arborescent structures and shaded streets become a part of the landscape. California has many such towns, centers of activity and enlightenment for their rural surroundings, the pride of the resident and the delight of the visitor, and they nearly all have arisen from rude beginnings.

PACIFIC RURAL PRESS.

Office, Clark Building, No. 330 Market Street, San Francisco, Cal.
Telephone, Davis 771.

TWO DOLLARS PER YEAR IN ADVANCE.

Advertising rates made known on application.

Registered at S. F. Postoffice as second-class mail matter.

E. J. WICKSON.....Horticultural Editor.

San Francisco, February 10, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—A Rocky Ledge in the Foothills; An Early Foothill Habitation; A Later Type of Foothill Dwellings; A Glimpse at a Foothill Farm; The Beginnings of a Foothill Town, 81.
EDITORIAL.—Features of the Foothills, 81. The Week; The Japan Current Not in It; The Uplift in Sheep Interests; Miscellaneous, 82.
QUERIES AND REPLIES.—Seed and Bulb Growing; Sprouting Peach Pits; Weeds and Frost Occurrence; Care of Apricot Scions; What Is the Matter with Petite Sirah? A Wild Grass of the Mojave Region, 83.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending February 5, 1900, 83.
HORTICULTURE.—Peach Growing in New Jersey, 84. Winter Washes for Fungus; Lectures for Fruit Growers at Stanford, 85.
THE DAIRY.—Care of Milk for the Creamery, 85.
THE VETERINARIAN.—Various Ills of the Udder; For a Mangy Dog, 86.
FORESTRY.—Government Work on the Pacific Coast, 86.
AGRICULTURAL REVIEW.—87.
THE HOME CIRCLE.—Dreams of Twilight; Failure; Not a Writing Man, 88. A Good Scheme; The Story of a Malaria Germ, 89.
DOMESTIC ECONOMY.—Domestic Hints; Hints to Housekeepers, 89.
THE MARKETS.—Produce Market; Fruit Markets, 90-91.
CORRESPONDENCE.—Notes and Comments, 92.
PATRONS OF HUSBANDRY.—From the Worthy Master; Tulare Grange and the Wide Tire Law; Joint Installation, 94.
MISCELLANEOUS.—Beet Sugar Statistics, 92. The Prevention of Black Leg by the Use of Black Leg Vaccine, 94. Flowers and Ferns in the Home; List of U. S. Patents for Pacific Coast Inventors; Industrial Notes, 95.

The Week.

A few days of drying winds have been welcome on the lower lands and in some of the coast valleys where work has been waiting for better soil conditions. At the same time some parts of the State are still too dry and apprehensions of another year's water shortage are freely indulged in. It is too soon by far to give up; there may be floods of rain before the season closes.

The condition of things about Fresno is typical of the experience of other progressive localities. The work of the raisin association and the better prices of other cured fruits last summer is inducing very large orchard and vineyard planting. It is impossible to get as many trees and vines as are desired. Much the same facts prevail in other fruit centers in the central and northern parts of the State. Hosts of new people are coming in to make investments and the old settlers have assumed a speed in business which we feared they had forever outgrown. The activity is simply delightful.

Wheat has been shy about during the week and finishes up strong. Severe winter in the Northwest is looked upon as clouding the crop outlook. Spot wheat is improved by an increase in available shipping and shippers are looking for wheat. Barley is still being taken for Europe but prices are unchanged. Oats are dull. Nothing but fancy hay has any spirit and the low range of values continues. Bran has been demoralized with a large drop in prices, as though some one was trying to unload. Meats are unchanged, and in fairly good condition all around. Butter has fallen as supplies began to accumulate. Bids for shipping were less than current values and if the price goes to shippers' views there will be a fair movement. Cheese is slow and unchanged. Eggs are weak and lower, both here and at the East. Poultry has been cheap, as the Eastern receipts have been large for the current demand. Onions are firmer and in fact quite stiff for fancy, which are now coming chiefly from Oregon. Potatoes are firmer but not notably changed. Beans are stationary. Oranges are in rather heavy supply for local needs. Lemons are replacing limes, but there is no great movement; the weather has been too cold for them. New strawberries are in from several points. Dried fruit is quiet. Dried apples are affected by the weakness at the East.

The election of Thomas R. Bard of Ventura to the United States Senate is very satisfactory. Mr. Bard is a large farmer and a large man generally. He just fits the place.

The Uplift in Sheep Interests.

There is probably no feature of the recent awakening in live stock matters richer in suggestion than the striking elevation in the sheep and wool interest. California is enjoying her share in it, as our market reports and comments for the last few months have shown. The general stimulation of interest and advance in values has made our sheep rise in price and has led to sales of wool in advance of shearing, or at least to free offers for such purchase, for to what extent they may have been accepted we do not know. But our local experience is only a faint indication of the activity which prevails elsewhere, for our people have so widely forsaken this line of production during recent years.

It is almost incredible to what values popular breeding stock is mounting, and what large sales are being effected by those who fortunately have the stock. We read in the American Sheep Breeder that the recent sale of thirty-six Rambouillet rams at public auction at Buenos Ayres for the princely total sum of \$35,710 is without precedent in the history of the sales of any breed of sheep anywhere in the world. Other sales, notably the great Lincoln sales last year in England and Buenos Ayres, and the still more remarkable sales of Merinos at Sydney in recent years, have broken previous brilliant world record prices for single animals, and even for small stud flock drafts of half a dozen or a dozen animals, but so large a collection as thirty-six, or even twenty-six, sheep at one sale never before made an average of within a fraction of \$1000 per head. It is not half so remarkable that a single great ram made \$4500 at this sensational sale of stud sheep as that nearly two score of them made an average of almost \$1000 each, and every one of them home-bred in Australia from imported stock.

California began with these large French Merinos more than a quarter of a century ago and bred them in good shape, though for years there was scant interest taken in them. Later, as our readers know, considerable exports were made to the Argentine and elsewhere, while the local demand was very little. Now, as far as the French Merino interest in the United States is concerned, the situation has radically changed. With the largest attendance in the history of the association, the annual meeting of the American Rambouillet breeders was a most notable one. Enthusiasm ran high as the demand for Rambouillets was discussed, and one and all argued a bright future for the big Merinos. The main question seemed to be, How could the Rambouillet breeders keep up with the demand staring them in the face? With single American-bred rams going as high as \$300 and the overwhelming inquiry and demand from the range, the breeders seem bewildered over the prospect for prices.

The breeders of the American Merino, built up upon a Spanish foundation, do not propose to concede the ground to the French types. At the last meeting of the New York Association of Merino Breeders, recently, there were very resolute words spoken of the superiority of the wrinkly type and what it has done for the wool interest, and the wrinkly people are disposed to make a warm issue against big, smooth-bodied Delaines and Rambouillets. They point with pride to the "success in Australia and in other foreign countries of the old and tried sort that now stand at the head of all other breeds the world over for wool-growing purposes and the only pure breed of sheep whose improvements were made in this country." This includes a good fighting issue and we doubt not that it will be well battled. Just now, however, the French have apparently the lead. It is interesting fact that an Ohio breeding firm has just bought a Delaine ram from an Oregon breeder for \$150 and will place him at the head of their flock.

However the battle may rage in other parts, the Pacific coast is to have peace, if the well known flock owner, J. H. Kirkpatrick of California, has his way. He announces the organization of the Pacific Stud Flock Register Association, an organization to record pure-bred sheep of any breed. Mr. Kirkpatrick wants it distinctly understood that this association will not antagonize any of the organized stock register associations, but is intended to bring the pure-bred flocks on the Pacific coast into one organization to promote the best interests of the pure-bred sheep on the Pacific slope. Mr. Kirkpatrick reports a

prosperous year and looks forward to a great season for Western stud flocks. We believe he is right, but if breeders are to enjoy a home market they must let Californians know what they are doing. The rising generation of California farmers need education on the sheep question, and without it we shall hardly get our flocks to anything like the normal number. There is an impression that sheep are only for a wild country, while in fact they have a place in the most intensively cultivated country. In the United States we have nine sheep to every 640 acres. England has 240 to our 9 on the same area. What a prospect this affords for the encouragement of the American shepherds! In time we cannot help but surpass all other countries in the number of our sheep, and California shall have her share of them.

It seems to us that the PACIFIC RURAL PRESS is doing its full duty in this line. We have a conviction that it will be good for the State to have more sheep. Now, if it is to anyone's interest or to anyone's belief that this industry should be built up, let him join us in the campaign for popular education in sheep matters which must be undertaken.

The Japan Current Not in It.

Readers will remember the discussion a year or more ago as to whether a more northerly course of the Japan current would not withdraw winter storms from California and cause our dry years. If this should be the case, the temperatures in the course of the current ought to show whither it was running and what the after effects might be in California. An attempt was made by Prof. W. H. Hammon, formerly in charge of the San Francisco Weather Bureau office, to correlate the observed temperatures on Unga island, Alaska, and the phenomena of rainfall in California three months later. In his recent report to the Secretary of Agriculture, Director Moore of the Weather Bureau stated that Prof. Hammon's paper, while containing a number of interesting suggestions, was not conclusive on any point, nor did it claim to be. The subject, however, was one of very great interest, and possibly of practical importance to the people of the Pacific slope, and as such was referred to a board at the central office, of which Prof. Cleveland Abbe is chairman. Prof. Abbe in his preliminary report says:

We have undertaken to collate all that is known with reference to monthly mean temperatures at stations in Alaska and its neighborhood. This extensive work is not yet complete, but is sufficiently advanced to enable me to say the phenomena over California are not necessarily preceded by anything that happens in Alaska. In order to predict what is to happen in California a month, or even a week, in advance, we must take a wide survey of the whole atmosphere. In order to get a truer comprehension of this important subject, we have, therefore, rearranged the maps of normal mean pressure and temperature for the northern and southern hemispheres, and have included a study of these in our report upon long-range forecasting.

It therefore appears that, though we may not rely upon the Japan current as a revelator of this important matter, the proposition has led to a wider study of Pacific phenomena, which may ultimately bring us some pertinent suggestions in this important matter.

READERS of the PACIFIC RURAL PRESS who wish to roam for a week in classic halls should give heed to the communication in another column by Prof. V. E. Kellogg announcing the week of educational work for fruit growers which will open at Stanford University on February 19. It will be an occasion of rare interest, entertainment and enlightenment as well, and will result in intellectual and social expansion which will fit the one who experiences it for a whole year's resistance of narrowness and ignorance. The fruit growers owe it to themselves to profit by this opportunity; they owe it also to the hospitality of Stanford University to exhibit eager acceptance, and, finally, they owe it to Prof. J. H. Comstock who shed the first strong ray of light upon our entomological ignorance two decades ago to show their appreciation of his disposition to give his time, which is so valuable for research, to renewing acquaintance and intercourse with California fruit growers and to helping them in the later phases of the insect problems. The occasion will be delightful; let all who can enjoy it.

QUERIES AND REPLIES.

Weeds and Frost Occurrence.

TO THE EDITOR:—Is it the colder in an orchard that has been cultivated or in one in which the vegetation is growing? Some claim that if orchards were not plowed till after danger of frost was past fruit would not be frozen so often.—SUBSCRIBER.

It is a fact that in some cases blossoms and young fruit on trees over uncultivated ground have escaped injury while the same fruits adjoining on cultivated ground have been frosted. It has been noticed that even parts of the same orchard or vineyard have been injured just as far as the plowing has gone and not farther. The same thing has been noted with reference to ground wet with irrigation and unirrigated land adjoining. Over the wet ground the fruit has escaped. In the latter case it is due to the presence of water vapor which allows condensation at a higher temperature and this condensation gives off heat, and all this heat must be lost before the freezing point can be reached. Therefore, while the temperature remains near the freezing point the injury can be prevented, but of course if the temperature falls too low or if it is too long continued all this heat will be radiated and injury will result in spite of the moisture present. Now as the vegetation is exhaling moisture it may act in the same direction as a wet soil surface would do, and this may be the explanation of the fact that sometimes unplowed land carries its bloom and young fruit safely. But it must be remembered that this agency can only be effective when conditions are favorable for a very light frost and fruit may be lost in spite of it. And this, too, is shown by experience, which is that blossoms are safe on uncultivated upland while they are destroyed on lower places also uncultivated. Postponing plowing is, then, no surity of saving fruit, though it may do so in some places and on some occasions. But one encounters also the necessity of choosing between evils, because one might leave his land unworked for the chance of escaping frost and at the same time lose this opportunity of getting his ground in good condition—thus ruining his fruit by lack of moisture in the summer though he saved it from frost in the spring. This is rather a deep question: each must think of it and decide according to his elevation, soil character, moisture supply, etc.

Seed and Bulb Growing.

TO THE EDITOR:—Have you a book on seed and bulb growing in California from which I can get the general features of the business?—SUBSCRIBER, Los Angeles.

There are no books relating to seed and bulb growing in California. There have been a number of articles printed on the subject in the PACIFIC RURAL PRESS and in other papers, but beyond that there is nothing available except the chapter in the book on "California Vegetables," and that relates chiefly to the growing of vegetable seeds. Bulb growing and collecting of native bulbs is pursued by a number of people in different parts of the State: Carl Purdy, Ukiah; Mr. Luther Burbank, of Santa Rosa; Mrs. Kersey, Haywards; Mr. F. A. Miller, 215 Hayes St., San Francisco, and Mrs. Thos. B. Shepard, Ventura, are leading operators in bulbs, and there are many others whose names do not now occur to us. There are probably half a dozen large seed farms in Santa Clara and San Luis Obispo counties. In your own part of the State there are also collectors and growers here and there, a list of which would be quite difficult to secure. Some of these parties are doing very well by giving their lives to this sort of work and pursuing it night and day in the most earnest manner. So far as we have observed those who have undertaken it with less devotion are quite likely to soon weary of it.

Care of Apricot Scions.

TO THE EDITOR:—You kindly answered my questions about apricot grafting. You said I ought to put away the scions at once to keep them dormant. Will you tell what wood to take for scions and how to keep them?—READER, Ventura county.

The scions are to be made from the wood which grew last summer, and it is a good idea to take off quite long shoots and bury them in the ground in a cool place, where they will be kept nicely moist, but not wet. These shoots are to be cut up into scions at the time of grafting. The size of the wood should

be that of a leadpencil—some a little smaller, some a little larger—and, in cutting up these shoots to make scions latter, the smaller parts of the tips of the shoots will be rejected, so that you ought to put away a good deal more wood than you will be likely to use, to give the grafter something to select from.

Sprouting Peach Pits.

TO THE EDITOR:—I have some peach pits I want to get sprouted. They have been kept damp for the last four or five weeks, in order to soak them. What will be the best way now? Would you advise a hot bed, or is it better to crack them open and only plant the kernel? I wish to get them sprouted first and then plant them in my orchard, so as to bud them on the place where they are to remain. By so doing, I do not disturb them by transplanting and do not break the taproot.—F. HEINSIUS, Toluca, Los Angeles county.

Take a wide, shallow box, make drainage holes in the bottom and put it in a sunny place. Put in about an inch of sand, then a layer of pits, another inch of sand, a layer of pits, etc., covering with a couple of inches of sand and a light cover of straw to retain moisture. Keep the mass just nicely moist, but not wet. After the treatment you have given the pits they ought to sprout in a few weeks in this warm sandwich. The sprouts can be well out without being injured at planting. We do not count the planting in permanent place of any great advantage to the tree and of great disadvantage to the grower generally. Trees which have deep-rooting habit will root deeply on transplanting, if soil and moisture conditions are right, whether they do it with one tap root or several tap roots. But, of course, we have no objection to our correspondent's method, if he cares to take the extra trouble.

What is the Matter with Petite Sirah?

TO THE EDITOR:—We have on our place some vines called "Petite Sirah" that have something the matter with them, and as we are new at the business, I should like to know what it is, and what to do to remedy it if possible. It seems that large bunches of grapes form, but while small, they all fall off except one or two bunches. The vines are apparently strong and healthy, with abundance of wood, trained on wire and left with from three to six canes to tie up. Other varieties of grapes on the same land, and in the immediate vicinity, bear profusely. We have been advised to graft another variety on those roots, but the vines seem so healthy, I hesitate to do it till hearing from an authority.—H. N. Cross, M. D., Livermore.

Petite Sirah acts unhandsomely in some places and various reasons are alleged, such as too short pruning, lack of sunshine and warmth at blooming, etc. These reasons should not exist on the vines above described in Livermore. Who has experience bearing on this point which would help our querist to decide what to do with the vines?

A Wild Grass of the Mojave Region.

TO THE EDITOR:—Inclosed please find sample of grass that has come up quite plentiful with this year's sowing of alfalfa. Is it of much importance for stock feed?—H. H. ROBINSON, Lancaster.

The grass is identified by Mr. J. Burt Davy, assistant botanist of the University Experiment Station, as a variety of the Barnyard grass (*Panicum Crus-galli*). The Mojave Indians used to collect the grain, grind it into flour and cook it for food. It is considered useful for stock feeding, either green or for the silo, as it is said to be much liked by cattle. It is not so well adapted for hay, as it is a coarse, succulent grass and rather difficult to dry, though in the vicinity of Lancaster this last feature would scarcely be noticeable.

The Persians and the Phylloxera.

TO THE EDITOR:—Shall we dig up the Persian table grape vines sent out by the University and plant resistant vines in their place?—GROWER.

Although we do not know of a Persian vine destroyed by phylloxera, there is every reason to expect that they will have the weakness which pertains to the whole vinifera species to which they belong. To resist the insect, then, they must be established upon a native American root which suits the soil in which it is desired to grow them. They will be no exception to the rule that, as a root, the vinifera must go out of use when the phylloxera reaches their locality.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 5, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

The temperature has averaged slightly above the normal throughout the State, but foggy, cloudy weather has continued in the valleys in some portions of the coast and bay sections and in southern California. Light showers of rain have fallen in the central and northern portions, and in some localities this has retarded farm work to a considerable extent.

Plowing and seeding continue on the light soils, but the adobe and clay lands are still too heavy for working, especially in the central and northern sections. Pruning in orchards and vineyards has progressed quite favorably, and is nearly completed in many localities.

Early sown grain continues in excellent condition, generally, though needing rain in portions of southern California. In some parts of the San Joaquin valley grain is reported to be turning yellow in spots, owing to a scarcity of sunshine. Present indications are that with the usual spring rains the yield of grain will be considerably in excess of the normal. Pasturage continues plentiful in most sections, but would be benefited by rain in the south, where it is reported that feed will become scarce unless good rains come soon.

Almonds are in bloom in all sections, and in some localities apricots, early peaches and other deciduous fruits have started to such an extent that considerable damage will probably result should heavy frosts occur.

The only frost reported during the week was at Rosewood, Tehama county.

SACRAMENTO VALLEY.

Very little progress was made during the week in plowing and seeding, except in localities where light soils predominate, the adobe and clay lands being still too heavy for working. Heavy fogs and cloudy weather continued, with light showers in some sections. Grain is in excellent condition, and with the usual spring rains will yield an unusually heavy crop. Green feed is in good condition and stock are fat and well fed. Almonds are in full bloom. Apricots and some varieties of peaches are commencing to bloom, and with pleasant weather and sunshine nearly all lowland fruits will bloom within a week. Orchard pruning is still progressing. Citrus fruit trees are making good growth.

COAST AND BAY SECTIONS.

Cool, cloudy weather prevailed during the week, with fogs and light rain in the northern portion. Farmers are improving every opportunity for plowing and seeding and considerable progress has been made, some sections reporting that seeding is nearly completed. Early grain continues thrifty, with prospects for a crop much heavier than the average. Green feed is abundant. Almonds and some early deciduous fruits are in bloom. Orchardists and vineyardists continue pruning and this work is nearly completed.

SAN JOAQUIN VALLEY.

The weather has continued cool, foggy and cloudy during the week, with very little sunshine, and light showers of rain are reported from some sections. Grain is still in good condition, though needing rain in some localities, and one report states that owing to lack of sunshine grain is turning yellow in spots. Pasturage continues plentiful. Plowing and seeding are progressing favorably, with prospects of a very large acreage in grain. Pruning in orchards continues, and is nearly completed in some localities. Almonds and some early deciduous fruit trees are budding; cold weather would be beneficial in retarding this early development.

SOUTHERN CALIFORNIA.

Heavy fogs during the week, with considerable cloudy weather, benefited grain crops, which are still holding out very well in most sections. Rain at this time would be very beneficial throughout the district, and in some localities it is reported that grain and pasturage will suffer unless rain comes soon. The continued warm weather has caused almonds to bloom, and started deciduous fruit buds to such an extent that it is quite probable the almond crop will be very light, owing to the advanced stage of the trees. Orchardists are experimenting in various ways to retard the too early development of fruit buds.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 7, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date....	Minimum Temperature for the Week...	Maximum Temperature for the Week...
Eureka.....	.20	15.09	18.48	25.55	38	60
Red Bluff.....	.14	13.71	13.13	15.74	40	62
Sa ramento.....	.10	14.57	7.85	12.05	40	60
San Francisco.....	.02	6.14	7.77	14.16	44	64
Fresno.....	.02	2.08	3.86	5.34	36	60
Independence.....	T	2.08	1.15	4.36	28	60
San Luis Obispo.....	T	12.41	7.15	12.19	36	72
Los Angeles.....	T	4.57	2.96	10.06	42	74
San Diego.....	.02	2.64	3.73	5.65	48	68
Yuma.....	.10	0.76	1.34	2.19	40	80

HORTICULTURE.

Peach Growing in New Jersey.

TO THE EDITOR:—The New Jersey Horticultural Society has recently held its meeting here in the State House. I enjoyed it very much, and one paper especially was so good that I secured the privilege of copying it for your paper. Herewith you have it. Of course, California conditions are somewhat different; but any grower can adopt these statements to his individual circumstances. JOHN BODINE THOMPSON.

Trenton, New Jersey.

Rev. Dr. Thompson, who performs this kindly office for the readers of the PACIFIC RURAL PRESS, was for many years a resident of California and has always taken the keenest interest in our progress as a State. The essay which he sends will be very interesting and important to our fruit growers as a striking picture of how peach growing can best be done in New Jersey. Of course, some of the practices are unsuited to our conditions and some are almost contrary to our best methods, but still to know how others succeed, even under different conditions, is often very suggestive. The following is the essay in full, the writer being Samuel S. Voorhees, of Mine Brook, N. J.:

It is not my purpose to present to you the scientific side of peach culture. I am not a scientist, but a practical farmer, who, having had some little success in peach growing, am asked to tell the methods by which this success has been secured. By an experience running through more than fifteen years I have come to entertain some definite opinions respecting the peach industry, which I shall endeavor to set forth as briefly as their importance will allow.

THE QUALITY OF THE SOIL.—My experience has been confined to a gravelly clay loam on a porous clay subsoil. But it has seemed to me that any soil well adapted to wheat is well adapted to peaches also, provided it is sufficiently high and dry. It is true that many have failed to succeed with peaches on good wheat soils, but I believe that these failures have been due to other causes.

To make a success at peach growing, the farmer must study his soil and learn to supply by fertilization that which it may lack; and especially must he beware lest he charge against Providence that which may be due to his own laziness and inefficiency. The most melancholy failures I have observed have been on soils fully as well adapted and located as my own.

SELECTION OF TREES AND MODE OF SETTING.—Get your trees of a reliable nurseryman, selecting those varieties that the experience in your section proves to be good, and have in view also a proper succession at the time of ripening. Keep the trees well-trenched until the ground is prepared. A clover sod turned under and put into good condition for corn will make conditions favorable to the growth of young trees. But I have had equally good results following corn. Place the trees from fifteen to twenty feet apart each way. Dig your holes large enough to admit all the roots without crowding, and then trim off all broken and superfluous roots. Set the tree at about the depth it stood in the nursery, and fill the hole with fine soil well sifted in around the roots, tramping the surface so as to make it firm.

TRIMMING AND THINNING.—At the time of setting cut off all the branches and cut back the main stem to about two feet. During the summer rub off all the buds, allowing but one shoot to grow. The following spring leave five buds as near together as possible around this stem, about three and a half feet from the ground. After that trim yearly; and when you think you have trimmed sufficiently, take off as much more. "Cut off the big limbs while they are small." There is little danger of trimming too much. Make the tree the shape of an egg with the big end up. If you trim thoroughly there will be less need of thinning the fruit. Last summer I picked fourteen peaches that occupied as little space on the limbs as in the basket; but the limb that bore the fruit was not covered by half a dozen other limbs. The fruit had room to develop, and every peach came to perfection.

But thinning is sometimes necessary. It is a good rule that if there are a thousand peaches on a tree to take off at least half of them. Three hundred peaches will make three half-bushels of small fruit; and five, if they are large. Thinning, of course, increases the probability of getting large fruit; and it should be done in June, before the pit begins to harden. Pick off the fruit which hangs under the limbs, as that which grows above the limbs will stand bad weather much better. If one has not the time or the patience to do this, one or two sharp blows against the larger limbs with a pole will cause part of the fruit to fall.

I have found the hay rake the most effective means for removing the brush. Rake to the edge of the orchard, and burn at once. If sufficient thinning is done each year, the removal of the brush will give little difficulty.

CULTIVATION.—The year the trees are set a crop of corn may be grown to advantage, and the trees and the corn cultivated at the same time. I would

not advise cropping after the first year, as the trees should make a vigorous growth in preparation for the third year, when a basketful of peaches may reasonably be expected from each tree.

Many farmers leave their orchards until all the other spring work (such as sowing oats and planting corn) is finished. Then, about the first of June, when a good sod has formed, they go in and rip up and ridge up the soil with a plow. This is, I believe, a radically wrong method; for, in addition to leaving unsatisfactory surface conditions (alternate ridges and furrows), the fibrous roots that have been thrown out for the sustenance of the fruit are cut off. This process is almost invariably followed by "the June drop" and the "forced fruit" of July. During the last five years, on 3000 trees, I have had no "June drop" nor "forced fruit;" and during this time I have not had a plow in my orchard, but have used exclusively the cultivator.

Some twelve years ago I contrived a cultivator to avoid the necessity of driving close to the trees, and to save time by rapid work. With my peach cultivator a man and team can cultivate twelve acres in eight hours, and it is a pleasure to work with it. It runs but 2 or 3 inches deep, and the roots are but slightly disturbed. The surface remains level; there is less tendency to wash; the soil is kept almost free from weeds; and the trees make a vigorous and healthy growth.

This is not secured by one cultivation. We begin as early in the spring as the ground and weather will permit, and by the middle of July we have gone through the orchard seven or eight times. Then, we do no more cultivating until the next spring. Thorough cultivation is essential to keep the trees vigorous and long lived.

BORERS.—The borer is the worst enemy of the young peach tree, and must be kept out at whatever cost. A good wash may be made by dissolving in five gallons of hot water one pint of carbolic acid, one pint of soft soap (or its equivalent in alkali), one pint of salt, and half a pint of sulphur. Before the middle of May pour round the base of each tree, beginning about a foot above the ground, one pint of the mixture when warm. I have used this wash for three years with good results, and find that it also improves the appearance of the tree. Before I used this remedy it was necessary to dig around and examine each tree at least once a year; and we will have to return to this method if other remedies fail, for the borer must be kept out the first five or six years or it will ruin the trees. After that, it will not do much harm.

FERTILIZATION OF THE SOIL.—I would not use lime on a young orchard; but when the trees are four or five years old, would apply about twenty-five bushels to the acre, and repeat every four years. I have also grown crimson clover in my orchards with good results, sowing it before the last cultivation. Do not, however, postpone cultivation till the clover is in head and then plow under (as is usual for other crops), but begin to cultivate as soon as it starts in the spring. I have sown crimson clover in my nine-year-old orchard twice, the first time when it was four years old. It made a good start, and I left it till it headed out before beginning cultivation. But it lacked thrift, and got only about six inches high. When the trees were six years old I seeded to crimson clover again. The next spring I began cultivating early, and the more I cultivated the more the clover grew. I cultivated four times in May, each time seeming to tear the clover all to pieces; but it grew right along, and before it seeded it was two feet high and as vigorous as it could possibly be. After it seeded and died down we kept right on cultivating, and thus killed the next crop, which was coming up very thick. Then the trees put on their beautiful green, and the effect of this treatment has been manifest ever since.

I would not have you think that lime and clover are all the plant food we supply to our trees, or that these are given as steady diet. They are supplied rather as extras, for the sake of variety. The steady diet for peach trees is muriate of potash and ground bone—sometimes dissolved bone—sown broadcast in May at the rate of 250 pounds per acre. This may seem a large ration, but it is not too much. As we feed our trees but once a year, they should be supplied with all they can digest during that time.

Some growers do not feed them at all, but let them forage for their food. When the forage is exhausted they starve to death before they have half done their work. Others feed them about enough to last two months, and leave them in a starving condition the rest of the year. But if the best results are to be secured they must be liberally supplied with food. I do not mean that the amounts I have mentioned should be supplied every year, regardless of other conditions. Before the trees begin bearing but little fertilizer is needed. And if it is found in the spring that all the buds have been killed by the cold, only enough should be supplied to keep the trees vigorous. But, even in this case, do not neglect thorough cultivation. And when the trees become large by reason of age, an increased amount may possibly be needed. The amounts I have mentioned are not too much for the average orchard when a crop is in prospect.

Some may think that they cannot afford to pay so much for fertilizers. But, after all, it is but 5 cents

per tree when there are 180 to the acre, or 6 cents if there are but 150. And without proper fertilization you may lose, not only your profits, but also your trees. A large part of my crop in 1899 was from an orchard fourteen years old. This was the eighth full crop from that orchard, and the trees seem good for several years yet. I attribute their long life to thorough cultivation and sufficient fertilization.

A simple calculation will show how absolutely essential it is that nourishment be supplied to bearing trees. Two and a half baskets per tree is not a large average yield. At this rate an acre of 150 trees will yield 375 baskets—that is, more than six tons of fruit. From only half an acre I gathered during the past year that amount of fruit and sold it for \$60 per ton, thus realizing enough to pay for all the fertilizer and all labor necessary for the entire orchard.

To ask an acre of soil to furnish the nourishment necessary to produce even six tons of fruit in addition to that required for the natural growth of the tree and its foliage is simply asking the impossible; and to expect this several years in succession is downright folly. The trees must be fed, and it must be a constant study with the grower to know what and how much to supply at the different stages of growth.

WEATHER CONDITIONS.—After all efforts, much depends upon the weather. An unusually cold period in the winter, a sharp frost or a number of cold, raw, damp days in April or May may kill the buds and render a large crop out of the question.

In 1890 three frosts in May killed nearly all the buds, so that from 3000 trees I picked but thirty-five baskets of peaches. In 1896 I had only 300 baskets, and in 1898 but 800. And yet, including these two years of partial failure, during the last nine years I have averaged over 5000 baskets a year.

Trees on low land are more subject to injury from cold than those on land that is high and dry. Also, healthy and vigorous trees are better able to withstand cold weather than those whose vitality is low.

The weather at the time of picking will have much to do with the size and quality of the crop. An ideal season is one when the weather is constantly bright and clear, with occasional showers. Then the fruit will develop slowly and perfectly, and the flavor will be at its best. But a long storm or a few dull, muggy mornings will retard the development of the fruit, seriously affecting its flavor, and causing decay to begin before it can be placed upon the market. However, some varieties will stand this sort of weather better than others.

If the weather conditions are unfavorable during the picking season, it is absolutely impossible to have well-developed and finely flavored fruit.

PICKING, SORTING AND MARKETING.—Pick from the ground and from ladders, using hooks to draw the limbs toward you. If you climb the trees, you bruise the bark, causing it to decay, and the limb to die or break. If the weather is dry and clear, leave the fruit on the trees until fully ripe; if it is unfavorable, pick it while you can.

If you have a force of men picking, place over them one who will keep them organized, see that they pick no unripe fruit, and leave none that is ripe.

Have the fruit taken to the peach house and assorted as soon as it is picked. Grade carefully, putting just as good fruit on the top of the basket as below, and no better. Three grades will usually be sufficient. Fill your baskets rounding full for conscience sake, and place a few twigs upon them for appearance sake.

To send your fruit to a commission dealer and take what he is pleased to give you may be the easiest way to market it; but it will not necessarily be the most profitable. Of late years I have sent all my fruit to market on wagons; part to Plainfield, twenty miles distant, and the rest to Newark, twenty-seven miles distant. The cost of carting is about the same as if sent by rail, and the fruit arrives in better condition. I have also had a man rent a stand in the Newark market to handle my fruit only. In years when production was unusually large, this method has saved me from loss; for my agent was not deluged with fruit, nor did my fruit go into the rush with fruit of inferior quality. Thus, my returns have been larger than I would have received from commission dealers.

PROFITS, AND WHAT TO DO WITH THEM.—In 1890 the peach crop in New Jersey was an absolute failure. Since that I have had about 3000 trees in bearing, on nearly twenty-five acres. My orchards are respectively sixteen, fourteen and nine years old. The results are given in the following table:

Year.	Baskets.	Receipts.	Average price per Basket.	
			Gross.	Net.
1891.....	4,515	\$1,925	43 cents	18 cents
1892.....	7,132	5,700	80 "	55 "
1893.....	7,440	2,250	30 "	5 "
1894.....	6,583	2,960	43 "	18 "
1895.....	5,100	3,405	67 "	42 "
1896.....	300	250	83 "	58 "
1897.....	7,500	2,600	35 "	10 "
1898.....	800	500	63 "	38 "
1899.....	7,070	5,600	80 "	50 "
Totals..	46,445	\$23,520		
Averages.	5,160	2,800	54 cents	29½ cents

A study of this table reveals the fact that there

has been a remarkable variation both in yield of fruit and in prices secured. There have been large crops bringing small prices, and small crops bringing large prices. There have also been large crops that have brought large returns, the result for which I have constantly striven. But these variations are to be expected, and it is only after taking the averages of several years that anything definite can be learned.

The average cost of picking, carting and marketing the fruit is 25 cents per basket. After deducting this from the average gross amounts received, I find that my peaches have netted me about 29½ cents per basket. As my crops have averaged 5160 baskets, the average net receipts have been \$1510. From this deduct \$350, the average cost of fertilizers and labor previous to picking, and we have \$1160, the average net receipts from about twenty-five acres, that is, \$46.50 per acre. The net receipts are about 40% of the gross receipts.

I have charged against the orchard the labor of my own men and teams, so that the profits are reckoned after these are paid. In a good year I pay out to the pickers about \$400, and to the carters about \$700, which amounts add not a little to the prosperity of the community. Judging from my own experience, I hold that in this part of New Jersey, on the right kind of soil, and with proper care, peaches may be made the most profitable crop on the farm.

Now that you have your profits, give one-tenth to the Lord, and with the remainder pay your taxes, add to the comfort and beauty of your home, educate your children, and lay by in store a little for a day of need. And be well assured that the successful farmer is just as worthy of respect and esteem as the successful business man in any other business.

Winter Washes for Fungi.

If the winter spraying for repressing curl leaf, peach mildew, apple scab, shothole fungus of the apricot, etc., has not yet been done, and if the trees are still dormant, it will be well to attend to these treatments without further delay. The county commissioners of Sutter county have just sent us their formulas, which have been somewhat modified in accordance with recent experience.

PROF. PIERCE'S FORMULA FOR CURL LEAF.—Prof. Pierce says that the following wash for curl leaf is a fertilizer and invigorator of the tree and will effectually prevent curl leaf if applied very thoroughly from one to three weeks before the buds open:

- 5 pounds copper sulphate (bluestone).
- 5 pounds quicklime.
- 45 gallons water.

Dissolve the copper sulphate (bluestone) in a barrel containing ten or twelve gallons of water. Slack the quicklime and thin it to a creamy whitewash. Pour the whitewash very slowly through a wire screen into the copper solution. Stir the mixture thoroughly and add enough water to make forty-five gallons in all. Stir occasionally while applying as a spray to the trees.

In the preparation of the Bordeaux mixture it is necessary that the ingredients should be mixed in a wooden vessel. If an iron vat is used the copper will go to the iron and the effect of the spray is largely neutralized. Apply the remedy cold and as soon after it is prepared as possible. Never allow it to stand over night.

LIME, SALT AND SULPHUR.—While the tree is perfectly dormant the following formula and directions, if properly carried out, will produce an effective solution:

- 40 pounds unslacked lime.
- 20 pounds sulphur.
- 15 pounds stock salt.
- Water to make 100 gallons.

Place ten pounds of lime and twenty pounds of sulphur in a boiler with twenty gallons of water, and boil over a brisk fire for not less than one hour and a half, or until the sulphur is thoroughly dissolved. When this takes place the mixture will be of an amber color. Next place in a cask thirty pounds of unslacked lime, pouring over it enough hot water to thoroughly slack it, and while it is boiling add the fifteen pounds of salt. When this is dissolved add to the lime and sulphur in the boiler and cook for half an hour longer, when the necessary hot water to make the 100 gallons should be added.

Do not boil all the ingredients together, but follow the above directions explicitly, if you desire good results from this remedy.

If used for San Jose scale, use sixty gallons of water instead of 100 gallons.

Lectures for Fruit Growers at Stanford.

TO THE EDITOR:—During the week beginning Monday, February 19, 1900, a series of special lectures on subjects relating to the horticultural interests of California will be given at Stanford University under the auspices of those departments of the University whose work is related to the work of fruit growing. All persons interested are invited to attend these

lectures, and to spend the week in residence at the University considering the broader aspects of fruit growing.

Professor John Henry Comstock, the well-known entomologist of Cornell and Stanford Universities, will give a number of lectures on "Economic Entomology." Lectures will also be given by Mrs. Anna Botsford Comstock on "Nature Study and Insect Life;" by President David Starr Jordan on "The Selection of New Forms of Fruit;" by Professor W. R. Dudley on "Forest Preservation;" by Professor J. C. Branner on "The Soils of California;" by Professor E. A. Ross on "The Transportation Problem;" by Professor F. A. Fetter on "The Economics of Fruit Growing;" and by Professor O. P. Jenkins on "Bees and Fruit Growing." Professor C. W. Woodworth of the University of California will lecture on "The Principles of Spraying."

In addition to these lectures by members of the faculty of the University there will be given a number of lectures by men not connected with the University but representing the practical fruit grower. Among these will be Mr. E. M. Ehrhorn, Horticultural Commissioner of Santa Clara County; Mr. E. Berwick of Monterey, and others.

During the week of these special lectures the regular work of the University will be going on and visitors will be welcome in all the lecture rooms and laboratories. No fees will be charged. Visitors can obtain rooms for the week in Encina hall, on the campus, at 50 cents per day and meals in the University inn, on the campus, at 75 cents per day. Rooms and meals can also be obtained at special rates in Palo Alto, one mile distant, with frequent omnibuses to the University. A special programme will be issued in a few days, giving the exact titles and hours of delivery of all the lectures. These programmes will be sent on request.

VERNON L. KELLOGG,
Stanford University, Cal. Sec'y of Committee.

THE DAIRY.

Care of Milk for the Creamery.

By GEORGE A. SMITH of Los Angeles, at the Southern California Dairy Association.

All writers on the manufacture of dairy products begin by saying, first of all, that, to have high-grade goods, the maker must have good milk. Each successful dairyman who sells milk to families in the city will say his success lies in the care he gives his milk. The degree of success which a creamery attains or which it may attain, depends very largely on the care that has been given the milk it receives. The progressive and successful cheese maker who makes a uniform quality of high-grade cheese which always brings the top price, makes his cheese from milk that has been well and properly cared for. On the other hand, failure in any branch of dairying or in the manufacture of any dairy product, is sure to follow improper, careless, slipshod handling of the milk, and if we thoroughly study the successes and failures of the manufacturers of dairy products we can in nearly every case trace the principal cause to the care, or lack of care, of the milk. The success of a creamery and the reputation of the butter maker will be very uncertain unless the milk it receives is well and carefully treated every day in the year.

If what I have said be true, and I believe it is, then the proper care of milk from the time it is milked until it is received at the creamery is the most essential thing in the manufacture of high-grade creamery butter.

GOOD MILK WILL PAY.—Probably one reason so much milk is delivered to creameries in bad condition is because the patrons have never been shown that it is to their interest and that it will pay them and pay them well to bring their milk in prime condition, and that every time a creamery receives bad milk every patron, the owner and butter maker are injured, because every batch of bad milk received affects the flavor of the butter, lessens its value, decreases the demand for that brand, and injures the reputation of the man who made it. Not alone do the patrons of that particular creamery suffer, but the patrons of every other creamery in the same section of the country are damaged, because the reputation of the butter of that locality is injured. No butter maker can make faultless butter where tainted and badly cared for milk is received, and if the management does not know enough to detect and refuse it, manifests no worry or anxiety about it, or will not speak about it to the patron for fear of losing his patronage, and continues day after day receiving bad milk, he will soon find that there is something decidedly wrong with his business. The patrons will be getting smaller checks and the butter maker will be looking for another job. We may also, and I think without any doubt, find one of the causes of some of our surplus butter right in the filthy milk we receive at our creameries.

FUNCTION OF THE BUTTER MAKER.—As I write this paper I know I have been assigned one of the most

important subjects—if not the most important—with which the butter maker has to deal, and this is where there is most need of improvement in the whole process of butter making. In order to accomplish this improvement, the butter maker must lead his patrons to take an interest in their part of the process. He must first gain and hold their respect, show them that he is intensely interested in his work and that he is working for their good and watching their interests. He must appeal to their consciousness and show them that it is not right that all should suffer for the neglect and carelessness of one. He must make them fully and thoroughly understand how and why bad milk delivered to one patron is the cause of financial loss to each. He must make them decrease the value of the entire production of that day and cause a loss to every patron. The patrons expect the butter maker to make a first-class article, he therefore has the right to expect them to furnish first-class milk, clean and free from taints and foul odors. He must teach them how milk generally becomes contaminated, the causes of the bad changes and how to avoid them in the most effective manner.

ENLIGHTENED PATRONS.—Many patrons do not understand the fundamental principles which should be observed in the delivery of good milk. Ignorance of these principles probably is as much the cause of bad milk as intentional neglect. Many patrons will promptly improve conditions when their dangers are pointed out to them. The time has come when milk need not be handled according to uncertain theories. Science has come in and enlightened us so we can now trace many effects to their causes and also avoid many objectionable conditions in milk by removing the causes that made them.

It is now a well-known and established fact that souring, bad flavors, decomposition and putrefaction in milk are caused by minute microscopic vegetable organisms called bacteria. Their study will at once become interesting, instructing and profitable to any interested in the production or handling of milk. So much has been written about them and their action on milk that any one desiring to post himself can easily find plenty to read about them, and I think the patrons should be induced to read up on this subject, for then they can more intelligently care for their milk. It is not necessary to go into details as to the effects produced by the numerous forms of bacteria. Some are very troublesome whenever they find their way into milk, producing disagreeable flavors whenever they are allowed to multiply therein. Patrons should be taught how to keep as many of these germs as possible out of the milk, and also how to retard their action and thereby deliver their milk in good condition.

EDUCATING PATRONS.—After the patron has learned something about bacteria and their action on milk, and finds they cannot all be kept out, he naturally asks himself how the harmful action of those that do get in can be stopped. When he knows their source, how to avoid their getting into the milk and how to stop their action after they get in, he should be wholly responsible, and he alone, for the condition of his milk. But, until the patrons have made some study and have obtained a more thorough and practical knowledge of bacteria, butter makers must content themselves by giving instructions and laying down rules for the care of milk.

But, without a more thorough knowledge of bacteria, the patron cannot see the use of all the extra work you put upon him and will neglect some of the most important steps in the care of his milk, and thereby render almost useless the other things he does that he happens to think of. The different steps in the care of milk may be compared to the links of a chain; if one is weak the strength of the whole chain is impaired. If, in giving instructions and laying down rules, the butter maker can show the patron the whys and wherefores of each and every step, very much will have been done to secure a better quality of milk for our creameries. In fact, the whole thing resolves itself into a matter of training and educating the patrons on this too much neglected subject. One way to teach them would be to outline a talk, explaining and describing in detail each step in the care of milk, fully and clearly. Another good way to educate the patrons would be to put reading matter, treating on this subject, into their hands. A great deal of this can be had for the asking from the Department of Agriculture at Washington. Farmer's Bulletin No. 63 treats this subject very exhaustively and should be in the hands of every creamery patron.

WATCHING THE WEIGHING.—But these things alone will not be sufficient. The butter maker who would have good milk must, instead of placing some cheap boy at the weighing platform, take his position there every morning himself, inspect every patron's milk, and, in justice to all, refuse to accept any and all milk that is unfit. This must be done without partiality, no matter who brings the faulty milk, for it is not right that all should suffer in pocket and reputation for the neglect and carelessness of the few. Of course, it requires a great deal of tact, good judgment and common sense to do this, and there should be no doubt about its justice in the mind of the patron. By carrying out this plan the butter maker can best secure the interests of his patrons, command their honor and respect and win a high reputation

for himself and his goods. The local creameries should make a concerted movement in this matter; secure and distribute literature; publish rules and instructions for the care of milk; hold meetings to instruct patrons, and each should refuse to receive patrons who quit other creameries because fault was found with their milk.

THE VETERINARIAN.

Various Ills of the Udder.

Our dairy readers will be specially interested in a very plain and pointed discussion of ills of the udder which Dr. S. B. Nelson, veterinarian of the Washington Experiment Station, recently gave at the Dairy Association meeting of that State. We shall take the leading parts:

INFLAMMATION OF THE UDDER.—Mammitis or inflammation of the udder is one of the very common ills that you all have to deal with to a greater or less extent. It exists in two forms, the simple and the contagious. The former you will see much more often than the latter. It is due to either internal or external causes. Some of the external are injuries to the udder by wounds, blows, kicks, or being trampled on by other cows; the udder resting on cold stones or icy surfaces. The internal causes are non-milking, the introduction by various unclean foreign instruments, such as nails, darning needles, milking tubes or sharpened sticks of wood, of bacteria into the milk sinuses. Inflammation may also follow the congestion of the udder, which quite often occurs after parturition.

The symptoms will vary according to the stage of the disease; probably the first you will notice is the local inflammation, which is recognized by the heat, swelling and hardness of one or more quarters of the udder. You will have missed the earliest symptoms, such as the fit of shivering, slight fever and loss of appetite. However, as the disease advances, the loss of appetite, the drooping of the ears, the hot horns, the nearly entire absence of milk flow, the local pain in the udder manifested by the straggling gait, may all be observed, and tell you of the seriousness of the trouble. These symptoms may last in their severity from two to four days.

TREATMENT FOR MAMMITIS.—The treatment will vary according to the severity of the attack. If only one-quarter of the udder is slightly affected, drawing the milk several times daily and as often fomenting the udder with hot salt water, is all that is necessary.

Should one or more quarters be severely affected and there should be considerable systematic disturbances, such as I have previously mentioned, the treatment will have to be a vigorous and continued one. In the first place give her very little to eat until she is somewhat better but allow her plenty of water to drink. To regulate the constipated condition of the bowels give the animal from one to one and one-half pounds of epsom salts dissolved in two quarts of warm water. Give her also three times daily, for one to three days, fifteen drops of tincture of aconite, which will slow the action of the heart and consequently force less blood through the udder. The temperature will also be lowered.

HOW FOMENTATIONS ARE MADE.—The local treatment of the udder will consist in hot fomentations during the earlier and stimulations during the later stages of the disease. The hot fomentations should be used early to contract the blood vessel, thus assisting in diminishing the blood supply to the already enlarged udder. They are also very valuable in allaying the severe pain. These applications may be made in two ways, first by taking a pailful of hot water in which has been dissolved a handful of salt, and washing the udder continuously for fifteen or twenty minutes until the water has become chilled, then rub the udder nearly dry and apply with a good deal of friction a soothing liniment, such as tincture of opium and fluid extract of belladonna, each one-half. It is not necessary to apply this in large quantities but rub it in well. This course of treatment should be given the animal three or four times daily. Hot poultices may be substituted for the hot water. There is quite a knack in applying a poultice to a cow's udder so that it will be of value. Why, time and time again have I seen the poultice applied so that you could see daylight between the udder and the poultice. In these cases the poultice is nearly useless. The material to use for poultice is important. Bran and linseed meal will sour and are too heavy when they have been dampened. Linseed meal is also too expensive. I would advise the use of hops for poultices; they are light and bulky, they do not sour and retain heat fairly well; still, with them it is also necessary to change often or reheat them.

CHINESE HAND WARMER.—A very nice, convenient and inexpensive way to keep the poultice warm is by means of a Chinese hand warmer. They should have a place on every farm. There is no danger from them if you use them correctly. I have prescribed their use in a great number of cases. The lid being removed the tinder is lighted and placed inside, after

which you replace the lid. Now wrap one, two or three layers of cloth around it, so that it will not burn the cow when put in position in the poultice. It will heat the poultice for several hours, giving the advantage of a uniform temperature.

The cloth that is to contain the poultice should be quite strong, and wide enough to extend well forward and back of the udder. The ends should be torn in narrow strips so they may be tied individually and thus prevent slipping. The middle of the cloth should have four openings for the teats to pass through. This is very essential, otherwise it would be necessary to remove the cloth every time the cow is milked, and this is often, for she should be milked five, six or seven times daily, so that the constituency of the milk is altered as little as possible, and thereby lessen the irritation of the tissues of the udder, or so the milk will not curdle, which prevents its removal. This is very important and I desire to emphasize it to you.

FINAL TREATMENT.—After the inflammation has somewhat subsided, it often happens that a period of inactivity occurs; the disease remaining stationary, the treatment will consist of mild stimulations to the udder by means of liniments and hand rubbings. A very good liniment is the compound soap liniment, to which you may add one drachm of potassium iodide to each two ounces of liniment. Should the period of inactivity still continue, an abscess may form. This should be opened, drained of its contents and well cleansed and allowed to heal as a simple wound. In such a case, however, you would probably find the services of a veterinarian profitable to you. The final results from mammitis are complete recovery, recovery with the loss of one or more quarters of the udder, or, in very severe cases, death.

CONTAGIOUS MAMMITIS.—Contagious mammitis is of comparatively rare occurrence, but when it does make its appearance it will affect a large number of individuals in the herd. It is due to certain specific pus producing bacteria. The gland structure of the udder is principally affected. The treatment to be employed is very similar to the one recommended for simple mammitis, with the exception that antiseptic solutions should be injected into the affected portions of the udder. These injections may consist of peroxide of hydrogen, or a 1 to 8000 solution of corrosive sublimate.

COWPOX AND TREATMENT.—This is another udder disease that has been reported prevalent in a number of herds in Washington. It is never fatal to the animal, but causes a serious financial loss to the owner, because of the decreased flow of milk. I believe these outbreaks were caused by the transmission, through a wound in the skin of the udder, of vaccine from persons that had been vaccinated against smallpox during the past epidemic of this disease in the State. The symptoms are very characteristic. The teats become tender, a number of small pimples appear on them and well up on the udder. These pimples appear at the base of the teat, as a rule, and they come in crops—that is, they may be found in various stages of development at the same time.

They increase in size until the seventh or tenth day, when they are fair-sized blisters, containing a yellowish fluid. The walls of the blisters will break, discharge their contents, form crusts and heal. It is about twenty days from the beginning of the attack until the animal is well. The blisters on the teat are often irritated from the process of milking and become ugly sores. The person milking should be especially careful not to press and irritate the teat any more than is absolutely necessary.

Treatment is not necessary except in those cases where the teats become very sore, then some emollient application may be made to them after each milking. The benzoated zinc oxide ointment will serve the purpose well. I believe that if care is used and the affected animal removed from the rest of the herd, and the person that milks the affected ones not being allowed to come in contact with the well ones, the losses from this disease may be lessened, because the vaccine must gain entrance through a wound in the skin.

WARTS AND CHAPS.—There are several abnormal conditions of the teat, which are sometimes very troublesome. They are when the teat is warty, chapped or obstructed. The latter are due either to a flat membrane across the teat cavity or from the longitudinal swelling of the mucous membrane lining the teat canal.

The warts that cause trouble are generally the long ones attached to the teat by a narrow neck. Snip them off with a pair of scissors and apply tannic acid to the stump. In order to do this it may be necessary to throw the animal, and that is easily done by means of a rope attached to the horns, and then two half hitches made around the body, one just behind the front legs and the other in front of the hind legs. Be careful to see that the rope does not hurt the udder. The animal should be fastened in front to a post, so that she will not slide back and loosen the rope around the body. After the animal is down the hind legs may be secured by placing a slipnoose around them and drawing them backwards. The animal is then well secured.

Chapped teats generally yield readily to treatment. It is of advantage to have the animal milked dry, instead of wet. She should have an absolutely

clean stall, so that the wounds will not become soiled. An ointment, of one ounce of lanolin and ten grains of balsam peru, or the zinc oxide ointment already mentioned, will assist in healing the chaps. The calf should not be allowed to suck, as this causes too much irritation.

OBSTRUCTIONS.—In the cases of obstructions, either by a transverse vein or longitudinal thickening of the mucous membrane, an opening should be made with some small sharp instrument and then a cut made, so that flaps are formed in the membrane. Not just a slit, as this will heal and close. To keep the opening from closing use a stiff violin string. Cut it the right length to pass from the out opening in the teat above the obstruction inside. Double one end and tie it solidly, so that it cannot slip into the teat. Soak it before using—for instance, during the time you are milking the cow—in a 5% solution of carbolic acid. When you are ready to use it rinse it well in boiling water and do not touch the part that passes into the teat with your fingers, because it must be absolutely clean or it will cause you trouble. It will gradually soften and swell a little, so that it will bend with the teat and not slip out.

For a Mangy Dog.

TO THE EDITOR:—Will you please tell me through the PACIFIC RURAL PRESS the best remedy for the mange on dogs? I have a valuable Scotch Collie that has the mange, starting on his back and under his ribs. In the last two numbers of the PACIFIC RURAL PRESS I have noticed prescriptions for mange on horses. Shall I use the same?—READER, Angwin, Napa Co.

Wash once daily with a strong solution of creoline, a tablespoon to one pint of water. After thoroughly drying apply the sulpho-iodide ointment.

DR. E. J. CREELY.

FORESTRY.

Government Work on the Pacific Coast.

The division of forestry will continue the investigation of Pacific coast timber begun last summer, and several parties will start in June or earlier for the redwood belt of California and the red fir forest of Washington. The object is to compare the reproduction with the present depletion and to investigate the possibility of reforesting logged-off lands. There will be from fifteen to twenty-five men in each State. Most of the work will be done by young college men under the direction of Government forest experts.

The research will be carried on in pursuance of a system which undertakes by ascertaining the rate of growth and general life history of an existing forest to foretell the behavior of a future one growing under like conditions. Measurements will be made and the age found of several thousand trees in the logging districts, and large tracts will be cruised and surveyed to find the stand of timber in varying situations. By measuring and counting the annual rings of a tree at several sections an expert can determine not only its age but at what stage it grew fastest, when it reached maturity, and the exact amount of wood added during any period. By obtaining these figures for large areas it will be possible to compute the time necessary to raise successive crops in the Pacific timber region.

This work will be especially valuable to owners of timber lands who are in doubt as to the profit of paying taxes on their property after it has been logged.

ASSISTANCE TO FOREST OWNERS.—The offer to give advice and furnish working plans to persons desirous to plant forest trees, made last August by the division of forestry, has received immediate response from farmers in every part of the country. Although but a few months have elapsed since the offer became generally known, 118 applications have been received, and plans for 38 of these will be completed before the time for spring planting to begin. A still larger number have asked for written advice, which does not require field inspection by the forest officials. The treeless States have been quickest to avail themselves of assistance, the number of applications being as follows: Kansas 38, Oklahoma 19, Nebraska 12, North Dakota 9, Iowa 6, Indiana 5, Texas 5, Minnesota 4, Colorado 3, Washington 3, South Dakota 2, California 2, Illinois 2, New York 2, Ohio 1, Missouri 1, Delaware 1.

The majority of plans are for tracts of five to ten acres, intended by prairie farmers to afford wind-breaks and fuel supplies. A few plantings of 1000 and 2000 acres are being made as experiments in raising forest crops for market in regions where such material is scarce. After considering these applications in order the division of forestry has sent experts to study the conditions of as many as possible of localities which offered the best opportunities for object lessons to the public. Plans will be sent without delay to each owner, instructing him in detail how to plant, and recommending the best species adapted to his tract.

Agricultural Review.

ALAMEDA.

TOBACCO RAISING.—Livermore Herald, Feb. 3: B. V. Zaballa, the cigar manufacturer, believes that the grades of tobacco suitable for his manufactory can be grown here successfully. Several years ago E. C. Hahn tried the experiment of raising tobacco but was only partially successful. Mr. Zaballa believes he will be able to overcome the obstacles that caused Mr. Hahn to abandon the venture. He has accordingly entered into an arrangement with Lorenzo Marini by which the latter will set out 10,000 plants of the following varieties: Tennessee Red, White Burley, Ohio Seed Leaf, Zimmer Spanish and Yellow Prior. Mr. Zaballa says that the main drawback to the grown in the valley heretofore has not been with the quality, which has been excellent, but with the difficulty of curing it properly. He has a plan by which he believes this difficulty will be removed.

FRESNO.

CROP OF EARLY HAY.—Fresno Republican, Feb. 1: W. E. Marden has cut a crop of alfalfa near Fowler which is a novelty in the way of making hay. Usually the first crop of alfalfa is not cut until March or April, but, on account of the lack of frost this year, a heavy growth is already noticeable in many places. While it is easy enough to cut the alfalfa, the problem of curing is much more difficult.

PACKERS OBJECT TO SELLING.—At a meeting of the raisin packers, called to hear the report of their committee appointed to confer with the directors of the California Raisin Growers' Association regarding the feasibility of adopting a plan to amalgamate the interests of both the growers and packers, the following resolution was adopted: "That it is the feeling of the packers who own packing businesses, which have taken years to establish, that they will gladly co-operate with the growers in any plan that promises to promote the raisin industry and by which plan the packing interests will be enabled to profit to the same extent as permitted by the present existing contract. The packers assembled consider that the plans discussed up to date do not promise this. We believe that a prosperous industry can be maintained by the growers and packers which will be profitable to each, while any effort to drive packers out of business will assuredly result in destroying present harmonious relations and prove disastrous to all parties concerned."

HUMBOLDT.

DIRECTORS' MEETING.—Eureka Standard, Jan. 27: At a directors' meeting, E. B. Carr was re-elected president of the Ferndale Agricultural Fair Association, W. H. Roberts secretary, and the Ferndale Bank treasurer. It was decided to hold a five day's fair, beginning Sept. 4, 1900, and the following committees were appointed: Speed programme, W. B. Alford, Dr. S. B. Porter and E. B. Carr; premium list, W. H. Roberts, John Hansen, Neil Friel, L. Petersen and R. D. Boynton.

KINGS.

LONG THRESHING SEASON.—Hanford Sentinel, Feb. 1: J. Blend, who has been running the Hurlbut threshing outfit, has just finished the season's run in a job at N. Hansen's, near Armona. The machine has been out ever since July 10th.

LOS ANGELES.

ORANGE SHIPMENTS.—Los Angeles Times: There were sent East on Wednesday seventy-four carloads of citrus fruits. Three carloads were sent North. This closed the shipments for January and brought the shipments for the season, November 1 to January 31, both inclusive, to a total of 4203 carloads. This is the largest output of citrus fruit for the first three months of any season. For the same three months ended January 31, 1899, the number of cars was 3337, and for the corresponding period to January 31, 1898, the record was 3503. In the two

previous years the minimum carloads was 336 boxes, and this season it was 362 boxes. Taking the minimum for a basis and reducing the shipments to boxes the record stands this way: January 31, 1898, 1,177,008 boxes; 1899, 1,121,232; 1900, 1,521,486. Taking into account that fewer lemons have been shipped this season than in either of the others, it is safe to say that the shipments of oranges are 50% greater this season than in the season of greatest movement previously, that is, in 1898.

MERCED.

CROP PROSPECTS.—Stockton Mail, Feb. 2: J. C. Baxter, who has extensive farming interests near Dickinson, states that in his neighborhood and in the vicinity of Le Grand the farmers have about finished putting in grain. Owing to the fact that the season is earlier in the southern part of the valley than here, it is not thought safe to put in grain much later than this time of the year. He stated that, as the ground was heavy in that part of Merced county, the damp weather had interfered greatly with seeding, and but little more than half the usual acreage had been seeded. From Merced to French Camp, however, the usual acreage was put in, and wherever grain had been planted it was looking well.

MONTEREY.

GRAIN PROSPECTS.—Salinas Index: Wheat and barley crops around King City, on both lowland and tableland, are looking better than at any time for five years. A similar report is made of crops in the San Lucas and San Ardo districts. There has been a heavy planting of grain in the southern part of Monterey county.

BEET BUSINESS.—Watsonville Pajaronian, Jan. 25: Beet seeding is being pushed on the lands of the Spreckels Sugar Co. at King City. One hundred acres are seeded each day. Beets show up after the seed is planted a week, and on hundreds of acres the young beets are coming rapidly and are as thick as it is possible to have them. While the big mill at Spreckels is preparing for its last attack on the sugar beet crop of 1899, the King City district has hundreds of acres of rapidly growing beets which are intended for the 1900 campaign.

RIVERSIDE.

WATER COMPANY INCORPORATED.—Riverside Press, Feb. 3: The Citizens' Water Company of Bloomington has incorporated with a capital of \$12,500, in 2500 shares, each share representing one acre under the company's pipe line. The board of directors is as follows: J. C. Boyd, Riverside; D. Johnson, Colton; H. J. McNally, E. O. Stansell, J. S. Wheeler, Bloomington; J. R. McKinley, W. P. Martin, Rialto.

SAN BENITO.

TREE PLANTING.—Hollister Bee, Jan. 27: An unusually large number of fruit trees are being planted in this county this season.

SAN JOAQUIN.

WEST SIDE CROP PROSPECTS.—Stockton Mail, Jan. 29: Fred Barch, farmer and grain dealer of Grayson, made glowing reports of the condition of the crops on the West Side. The acreage is as large as usual and the grain is in fine condition. Nearly all the farmers have finished seeding, and many are now summer-fallowing. He claims that more land should be summer-fallowed, as it is the only way to raise a good crop even in favorable seasons. The dry seasons give the land a rest and make the crops of the following years a little better; but, unless the land is worked, it does not acquire the richness which plowing gives it. On land which he is now summer-fallowing the volunteer grain is about a foot high; and when this is turned under, it will add much to the fertility of the soil. He declared that he had never seen better prospects for a crop on the West Side than now.

ORANGE CROP.—Lodi Sentinel, Jan. 27: A visit to the orchard of Robert Adams shows that oranges can be profitably grown. Here we found Tangerines, Valencia Lates and Navels. There are six acres. The trees are nine years old and have never been sprayed. During the first three years the trees were protected in winter by a sheath of dry tule, but since then they have been open to heat and cold without the slightest damage. In pruning the interior brush is cut away and the whole tree bears a remarkably even load. The trees are irrigated from June until August. This season fully five carloads will result. Shipping commenced about Christmas and will continue for nearly a month yet.

SANTA CLARA.

POULTRY CLUB MEETING.—San Jose Mercury, Jan. 29: The annual meeting of the Santa Clara Valley Poultry Club was largely attended and the proceedings

were animated and interesting. President E. Van Avery presided. The officers elected to serve for the ensuing year were: President, George A. Seeley; vice-presidents, L. E. Brainard, D. D. Briggs and C. E. Goodsell; secretary and treasurer, E. Van Avery of Edendale. It was decided to hold meetings of the club on the afternoon of the second Wednesday in each month. The next regular meeting will be on Wednesday, Feb. 14th. It was learned that as a result of the club's efforts a number of desirable settlers have recently been induced to come to this valley to engage in the poultry business. The date of the annual fall show of the club for 1900 was fixed for November 14th to 12th, inclusive.

JOINING THE ASSOCIATION.—Mercury, Feb. 4: A number of meetings of fruit growers were held in various portions of Santa Clara county yesterday, from which come reports of great enthusiasm and practical results in promoting the California Cured Fruit Association. To date nearly 7000 acres of prunes have been signed, and the canvass with the contracts has scarcely begun. At a meeting at Mountain View yesterday 1000 acres out of a possible 1300 in that district were signed immediately. At Berryessa 79% of the acreage was signed.

A GOOD LAYER.—San Jose Mercury, Jan. 25: R. R. Bell of Los Gatos has a Cochon hen which he has owned for eleven years, and when asked why he kept her he assured us that she was still a good layer and continued to lay as many eggs as any of his younger hens.

WILLOW GLEN FRUIT UNION.—In a letter to the San Jose Mercury, L. A. writes as follows: The Willow Glen Fruit Union has just completed one of the most satisfactory years in its history. All the fruit was sold and shipped before the 15th of December, and each contributor received his settlement before January 1st. Two thousand tons of green fruit were dried, chiefly prunes. A considerable portion of this fruit was dried for non-stockholders, some of the fruit coming from the Sacramento valley. From handling this the Union cleared over \$1300, which pays all debts of the corporation and leaves a surplus of over \$1100. The Union owns plant, valued at about \$15,000, which is one of the most complete in the State. This was the first of the five great Unions of this valley to keep each contributor's fruit separate, thus being able to arrive at the exact shrinkage and grade of the dried fruit. The wisdom of this plan is apparent when the different rates per green ton are considered. The highest net price per green ton this season was \$41, the average \$33 and the lowest \$26. By this method every contributor receives his exact due. That this is appreciated by those who have fruit to dry is shown by the fact that one lot of 600 tons of green prunes was hauled about seven miles to this drier, and, further, that at least 500 tons of prunes could not be taken for lack of capacity for drying.

SANTA CRUZ.

BEET HARVEST CLOSED.—Watsonville Pajaronian, Feb. 1: The beet harvesting campaign closed in this valley last Saturday and was finished in the Salinas valley this week. The mill at Spreckels begins to-morrow on its closing run for the season of 1899-1900. It has been a long campaign for growers, mill operators and mill owners.

SHASTA.

FAIR DIRECTORS' MEETING.—Anderson Valley News, Jan. 27: The directors of the Twenty-seventh Agricultural District, comprising the counties of Shasta and Trinity, met in Redding last Saturday and decided to hold a fair before or after the State Fair and to provide for four days racing.

SONOMA.

HORTICULTURAL SOCIETY MEETING.—Santa Rosa Press-Democrat, Jan. 21: The annual meeting of the Sonoma County Horticultural Society was called to order by Pres. Jonathan Roberts on Saturday afternoon. The annual election resulted in the re-election of Jonathan Roberts, Pres.; Francisco Butler, Vice-Pres.; Herbert Slater, Sec'y; Nora A. Noonan, Ass't

STATE OF OHIO, CITY OF TOLEDO, ss.
LUCAS COUNTY,

FRANK J. CHEYNEY makes oath that he is the senior partner of the firm of F. J. CHEYNEY & CO., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of CATARRH that cannot be cured by the use of HALL'S CATARRH CURE.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1899.

A. W. GLEASON,
Notary Public.

Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

F. J. CHEYNEY & CO., Toledo, O.

Sold by Druggists, 75c.
Hall's Family Pills are the best.

Sec'y; Geo. T. Trowbridge, Treas. A committee was appointed to secure the names of the twenty-five fruit growers necessary for the petition to the Board of Supervisors for the appointment of a horticultural commission.

GROWERS FAVOR CO-OPERATION.—Santa Rosa Republican, Feb. 5: The meeting of fruit growers held Saturday afternoon was well attended. Previous to the afternoon meeting a number of fruit growers assembled with Director Woolsey and effected a temporary local organization, selecting E. Hart president and Hubert Bryant secretary. The organization took the name Santa Rosa Cured Fruit Growers' Association. The following fruit growers took membership: W. E. Woolsey, F. Butler, S. T. Coulter, C. C. Farmer, E. B. Dight, H. Bryant, E. Hart and Jonathan Roberts. Judge W. H. Aiken, an extensive fruit grower of Santa Clara county, here in the interest of the State Association, addressed the afternoon meeting.

TEHAMA.

WILL CUT GRAIN.—Red Bluff News: Some farmers state that their grain is growing so rank that, as soon as the weather and the condition of the soil permit, they intend to mow it, in the hope of preventing it attaining too heavy a growth of stalk when matured. Others say they will harrow the grain in. The ample rainfall, with following days of sunshine and warmth, have not only caused an abundance of grass, but an overabundance in the growing of grain, and if the stalk continues to grow before the harvest season, it is feared that many of the fields will be lodged before the grain is matured, causing the heads to rot.

VENTURA.

CHILI CANNERY.—Ventura Independent, Feb. 1: The chili cannery has just completed a successful run of four months and 100,000 cans of chili sauce and peeled chilis were prepared for market, and 80,000 cans peeled and shipped. The factory will be enlarged for next season's work.

YUBA.

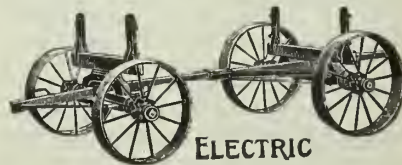
DIRECTORS ELECT OFFICERS.—Marysville Appeal, Jan. 29: The directors of the Thirtieth Agricultural District met and organized by electing W. P. Harkey president, George R. Eckert secretary and A. C. Bingham treasurer.

OREGON.

WOOLEN MILLS BURNED.—Ashland Jan. 21: The Ashland woolen mills, one of the oldest industrial establishments in the State, owned and operated by E. K. & G. N. Anderson, were this morning destroyed by fire. Machinery to the value of \$5000 had recently been added to the plant, and the concern was in the most prosperous condition. About \$6000 worth of blankets and blanketing in process of manufacture were also burned. The total loss is \$65,000. The insurance on the building and its contents amounts to \$13,500.

BUY THE BEST.

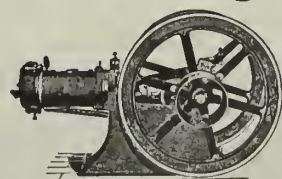
If you want the best low down wagon you should buy the Electric Handy Wagon. It is the best because it is made of the best material: the best broad tired Electric Wheels; best seasoned white hickory axles; all other wood parts of the best seasoned white oak. The front and rear



ELECTRIC

hounds are made from the best angle steel, which is neater, stronger and in every way better than wood. Well painted in red and varnished. Extra length of reach and extra long standards supplied without additional cost when requested. This wagon is guaranteed to carry 4000 lbs. anywhere. Write the Electric Wheel Co., Box 10, Quincy, Illinois, for their new catalogue, which fully describes this wagon, their famous Electric Wheels and Electric Feed Cookers.

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

Dreams of Twilight.

"When the windows flame at sunset
And the streets are sluiced with blood
And the dying day is sinking
In the night's advancing flood,
Smoky volumes lightly trailing,
Veil the housetops stark and high
Tinged with purple that the moment
Deepens in the Western sky.

"When the shadows round us gather
And the darkness settles fast
And each flush of life conclusive
Seems but prelude to the last,
Dreams shall soften wasted faces,
Fraught with presage darkly to-night
Dreams that like the smoke shall vanish
At the coming of the night."

—Ainslee's Magazine.

Failure.

Wouldst surely fall? Think solely of thyself,
Forget mankind and pile up hoarded pelf.
Count treasures where you might have reckoned deeds,
Pluck not the flowers; gather only weeds.
Forget that Time doth even all things up;
The Fool at last drinks from the dead King's cup.

Then in the end, a beggar at the gate,
Hold out thy shriveled, trembling hand and wait.

—New Orleans Picayune.

Not a Writing Man.

The boy stood and looked and looked at the girl. It was by no means the first time he had met her, and he would have been extremely glad to know that it was the last. That is to say, he would have wished, of all things in the world, never to part from her again. But this, he acknowledged to himself, was past hoping for. All her people were so clever, everybody she knew had written something or other, she was only used to the most intellectual persons. Why, even this party that he was now at was given in the great room at the end of her father's garden where he wrote his wonderful books. And he—he was such a countrified fellow. He only had money and a ridiculous, quiet intellectually useless strength of body. He could only shoot and hunt, and play games, and manage dogs and horses. Boorish pursuits, he thought despairingly. Once he brightened for a moment as he looked round the crowd of nervous, narrow shouldered men.

"I'd bet anything not one of them could bring down a pheasant at a hundred yards!" he said, and almost chuckled to himself.

Nobody took any notice of him. He felt that he had hardly any right to be there. If he had ever taken a composition prize at school, or even so much as written a letter to the papers, he felt that he need not have stood there so ashamed. Once she in her capacity as young hostess had come and spoken to him very shyly. And no wonder, he thought bitterly. What single thing in common with her could such a stupid fellow as he have? And so she had felt him alone, after taking him to one or two girls whom he supposed to embody genius in its most terrible form, the feminine specimen, and who therefore found and left him dumb.

So he wandered off into a far corner, for it was a large room, and when he had put himself behind a small grove of portfolios he could watch her without being seen or being in anybody's way. For a long time he gazed at her very fair and in white, with what he called a lump of back velvet against her shining white shoulder. Then at last she was lost to him in a throng far away at the other end of the room. He turned his back on everybody and looked with a curious, ingenious wonder at some line drawings which were in the corner on the wall.

He did not observe that the noise of voices grew less and less, and then

ceased altogether. He was lost in a dream of her till suddenly he was awakened by the electric lights going out altogether, and the sound of the key turning in the lock of the door. He listened acutely then, and heard the gay voices growing fainter outside, as the guests went along the Chinese lanterned path into the house to supper. He started out of his corner to rush for the door and try to make somebody hear him. But he entangled himself among the portfolios stands with a loud noise, and when he extricated himself and felt cautiously round in the darkness for landmarks, he found that he had lost his bearings. The sounds died quite away.

He stood still and wondered what he should do. And where was she? What more worthy man was handing her to supper? His teeth came together at the thought. It had been his one final daring hope, to take her in to supper this very last time—and then to retire to vegetate and slowly die in the empty country. And even this had been denied him. He felt a chair near and sat heavily down.

Then his sharpened senses seemed to take in a breath, and a soft rustle a very long way off, and there came a low, sweet voice. "Are you there, Mr. Penwin?"

Rapture. "Are you?" was all he could say, and he bounded from his chair.

She laughed gently. "Yes, I—I got left behind—as you did, you know!"

"I can't imagine how I did it," he said.

"You were dreaming something beautiful in your corner."

"I was," he cried out eagerly, and began to make his stumbling way toward her voice.

"Something that I shall perhaps read some day in a great book?" she breathed softly.

He stopped groping with a gasp. Heavens! this was worse than anything. She took him for a writer! He blushed as he stood there in the darkness. And, of course, how could she suppose that any guest of her father's had not written, or was not about to write, some world-stirring masterpiece? It thrilled him for a moment to think she had thought him capable even for an instant of writing something, anything. But the despair was all the flatter afterward. Well, it certainly was all over now, the only thing was to get away from her as quickly and with as little betrayal of his stupidity as possible. So he blundered out:

"Tell me what I can do to let you out."

"Us," she said, very gently, he thought.

"Us," he echoed, and his heart seemed to him to stop beating as he said it. That she should put herself into one word with him and say "us!"

"There aren't any windows," she said in a voice that struck him as oddly calm, coming through the tumult of his feelings. "Father has it lighted from the top, so that he shan't see anything to distract his thoughts, or we could have got out that way."

"Does he really?" said Penwin, in overflowing admiration of this iron type of genius. "Splendid man!"

"Do you think so?" she said slowly. "I think the blue sky or the great clouds and the trees and flowers would help to make one's thoughts beautiful—and true."

He became more ashamed than ever, feeling that her reverence for poetic things was high indeed.

The only thing he could think of to say was, "Where are the switches? Can't I turn on the light?"

"Outside." Then she laughed gayly. "I'm afraid we really are locked up till they remember us."

"We! Us!" It wrought upon him so that he could hardly bear it. Surely she did not understand what she was doing to him. "If you only knew," he began recklessly, and then pulled himself up.

"What?"

"Oh—you know everything!"

"Indeed, no; there are some things I would like very much to know." He heard that she sighed softly. This was torment. Why was he not a learned

man, so that she could have asked him and he could have told her?"

"I—I think I noticed a candle on that table," he stammered dismally. "The one with the prickly edge."

"Yes, if one only knew where it was," she said. "I'm quite lost, aren't you?"

"Quite," he said forlornly.

"I don't know where anything is."

"I do."

"What?"

"You," he said, simply.

"That's an idea," she said, as if it were an agreeable one.

"What? How?" he cried in delight. Was it possible, then, that he had ideas without recognizing them?

"If we find each other we shall at any rate have found something."

He was speechless. Then he said almost trembling:

"May I come to you?"

"Ye-es," she said. And well might she hesitate in that heavenly, dainty way, he thought. To find him was but a poor hope for her, even if to find her was to him just everything.

"Are you coming to me?" he asked, incredulous of his joy.

"Of course. I must meet you half way."

"If you could—Oh, if you would!"

"I am doing it," she said, and laughed softly again.

He heard several bumps and noises close to his own knees and shins, and supposed that he was making them with his own person, but he could not take account of that when she was "coming half way." Next moment his hand grasped a soft one, put out to feel its way. Before he or she could stop he had touched her, herself, and his nostrils caught up the scent of her hair.

She withdrew from him with a soft surprised "Oh!"

"He, too, could only echo the "Oh," and the hand loosed itself from his long-hand that dared not keep it.

Neither spoke for a while. He feared he should never be forgiven, and even furiously wished that he had written something. Then he would have had a right at least to want to touch her.

"I think I am standing near the table where the candle was," she said faintly.

He found his matchbox in humble silence. There was only one match in it and he struck it. It turned out to be the wrong table, but he succeeded in bringing the match alight to the candle, though he really did not see it. He only saw her. She was pale, he thought. She must be very angry. The candle had been, so it happened, pinched with a wet finger the night before. It sputtered and spat in a vixenish manner and went angrily out. The match too. There was a silence again.

"Well, we saw how we were standing," she said. Her voice was very low.

"Yes." So was his.

"But I don't seem to remember—"

"Nor do I!"

Another silence.

"It's so annoying," he ventured.

"It is," she said, but quite softly.

"So horrid for you!" she was saying at the same time.

"Oh, I don't mind."

"And, you see, it's—it's my father's room," she added in an explanatory manner, so that he could not but feel that something had been explained. He would have been glad to have been told what.

"I suppose we can talk?" she said nervously.

"Yes."

There was a long silence. He heard that she sat down and he moved close to her silently.

"I suppose—" he began desperately. "Oh!" she cried.

"Yes?"

"I didn't think you were so near!"

"Did I frighten you?" How he forebore to call her "dearest" he did not know.

"Oh, no."

"Then?"

"It startled me. But I think I like to have you near. It's so dark."

"It is—very dark." He came nearer. It was delicious to think she could be afraid of the dark. He had feared she was too clever.

"What were you going to say?" she asked.

"I suppose," he said, despair coming on again. "I suppose there wasn't anybody here to-night who hadn't written a book?"

"Most of them, several." He fancied she sighed again. It must be boredom this time, to think of the brilliant people at supper while she was shut up with him. He fancied that it was with an effort she turned to him and said:

"And when's your book coming out?" She did speak wearily.

"I—I don't know," he stammered.

"You are a slow writer, then?"

"I can't even spell!" he blurted out.

"Oh, I don't know that that makes any difference."

There was another silence. Then she appeared to make another effort.

"You really can't tell me when it would be of any use putting it on my list?"

"Oh, how can I bear it?" His voice came out of a dream.

She supposed his work had not been accepted, and she reproached herself for conversational clumsiness. And then somehow went on to make it worse.

"They generally don't mind," said. "Mind what?" he murmured.

"Being refused."

He felt himself grow burning hot.

"Have I been refused?" he stammered.

"You know."

"I didn't dream I had dared—don't understand. How did you guess what I—"

"It's so usual," she said.

He found he was fighting for breath.

"But you mustn't mind," she said with sudden kindness. "You must be proud, and say like the others, that it's gross blindness and prejudice, and that somebody else will recognize your merit."

"The—the others?" he stammered.

"What others?"

"All those who have been refused."

"Were—were there many?"

"Hundreds."

Penwin laid hold hard of the edge of

Young Girls

How easy it is for young girls to go into the "decline." They eat less and less, become paler and paler and can hardly drag through the day. They are on the steady downward course. Iron does them no good; strychnine and biters all fail. They need a food that will nourish them better, and a medicine that will correct their disease.

Scott's Emulsion

is both of these, elegantly and permanently combined. The Cod-Liver Oil makes the blood richer, and this gives better color to the face. The hypophosphites of lime and soda act as a strong tonic to the nerves. Soon the weight increases, the digestion improves and health returns.

At all druggists; 50c. and \$1.00. SCOTT & BOWNE, Chemists, New York.

WANTED.

A single young man who is a competent budder and grafter and understands general nursery work. Give references.

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her chair. "But you mustn't mind so much. Indeed, you mustn't, dear Mr. Penwin. Everybody begins by being refused. Please don't mind so."

"How can I help?" he demanded almost with a sob.

She put out a ministering hand; it met his cheek, which was bowed down. There was a tear on it. He seized the hand and kissed it, and then, they neither of them knew how, he was on his knees by her side.

"Make up to me for it—a little," he said. "It is as hard as death."

Her hand was still in both of his. He felt a subtle change in it. It quivered, and then seemed consciously to surrender itself to him. He kissed it again.

"After all," she said, by and by, in a new voice, "somehow I should not have thought you were a writing man."

"Why not?"

"You don't look like it, you know."

"I don't," he admitted miserably.

"And you never ask how much So-and-So got for So-and-So, and never seem annoyed at anybody's book being a success, and you never say a good thing, and then seem to think you've wasted it, and you don't talk about form and local color and—"

"You see," he pleaded, "I'm quite a novice!"

"And always when you came into the room there seemed to come a breath from the mountains, where nobody hunts for unusual words and where one can live with real and beautiful things instead of writing and reading about them, and I—liked that."

He was so sad and so happy that he was dumb.

"D' you know, I'd—I'd rather you didn't write!"

"Dulcie!" He had never dared even to think of her by her name, but now it seemed the one word in the whole world that belonged to his lips. "Dulcie!"

"Yes," she whispered.

"Don't you like writing men?"

"I'm sick to death of them."

"Could you like a man who couldn't put two words together?" he panted.

"I'm afraid I do."

"Could you—could you love him?"

"I'm afraid I do."

"For one sharp moment happiness seemed a greater agony than despair. Then he leaned his face to hers, and the agony was gone.—Constance Cotterell, in Good Words.

A Good Scheme.

"Maria," he said, as he entered the house, speaking before his wife had time to say a word. "this house is in an awful condition."

"Why, Henry——" she began.

"Don't try to excuse yourself," he interrupted. "Look at this room! I was going to bring a friend home with me, but I refrained for fear the house would be just in the condition that I find it in."

"If you had sent word, Henry——"

"Sent word, Maria! Why should anyone who claims to be a housekeeper have to be notified so that she can scurry about and make things look respectable? And that dress, Maria! It's outrageous to be dressed in that fashion at this time of day."

"I could have changed it——"

"Oh, of course. You could have done lots of things, but you didn't. You should be ready to entertain your husband's friends at any time. I suppose the dinner is cold, too."

"It's not so good as it was. You're late, you know."

"Of course, and if I had brought my friend with me he'd have to sit down to a cold dinner or one that was burnt to a cinder, and we should have both felt humiliated and should have had to apologize. It isn't right, Maria! It isn't right at all."

And when he had settled down in his armchair after dinner he chuckled to himself, and muttered:

"But I would have got a roasting for being late if I hadn't started in first. It's a good scheme."

An interesting new club, the County Woman's Club, has just been organized at Lapeer, Mich. Its members are all farmers' wives and other women who have lived on farms. There were two

vacant rooms in the county courthouse and the women obtained permission to use them as clubrooms. Each member paid for one yard of carpet and gave one chair, one cup, saucer, plate, knife, fork and spoon. The club has a literary programme every Saturday, and a meeting, with refreshments, once a month. The rooms are open all day Saturday, giving the members a comfortable and homelike place to rest.

The Story of a Malaria Germ.

Theodore Waters, in Ainslee's, has edited the life-story of a malaria germ. Here is the germ's description of a fight with the phagocytes: Just then a lot of our new-born brothers began crowding upon us from behind, and when we turned to remonstrate, we saw, away to the rear, a great commotion. A fight and a retreat were going on. It was slaughter of the most horrible kind. There at the head of a tide of blood were columns of phagocytes cutting into the rearward of malaria germs, killing them, swallowing them whole, and growing lustier as the process went on. It was an awful spectacle. I hung back, fascinated. A phagocyte would race down the current with a swift overhand stroke, reach out and grasp a microbe from behind. Then the arm of the phagocyte would shorten, and, as it seemed to me, retreat into the white monster's interior, dragging the germ with it. Sometimes a phagocyte would grow facetious, and would bump against a poor germ as though shouldering him out of the road. Away would go the poor germ, swimming fast in order to avoid the encounter, but his enemy would then swim faster, striking him fair in the middle, and, with a slow motion going inside out like a glove, and actually taking the germ in with him. Ugh! I should have remained there in a sheer spell if my companion had not pulled me along with him.

"Make for a red blood cell," he called as we went onward.

"What," said I, "a red cell? We have just come from one!"

"Never mind," he replied, "find a red cell and eat your way inside. It is our only chance. See, the others are doing it!"

"Sure enough, many of my brethren had selected good red blood cells and were penetrating the skin and climbing inside to escape the phagocytes. It seemed to me so unfortunate, just as we had gained our freedom, but it was better than death. So we looked for cells. Every cell we came to, however, was being occupied, and it seemed to me that the phagocytes were gaining on us when my companion suddenly pulled me to one side and cried:

"Look out! look out! Keep away from that current near the center there. It is worse than death!"

"What is it?" I cried, for I could see nothing.

"Don't you see?" he said, hugging the wall of the tunnel, "there it is, that discolored streak, running near the center of the stream. It is caused by what men call quinine, and it is deadly if you swim in it."

"How does it affect you?" I asked.

"If you swallow it, it numbs you—makes you incapable of motion—stupefies and prevents you climbing into a red blood cell—it is living death, and the friend of the phagocytes!"

"I shuddered and swam on. At the end of a sewer-like opening, my friend darted to one side and seized a red blood cell which was unoccupied. He began work on it at once.

"Good-by, brother!" he said. "Here is where I stop. I've work to do. Hope you'll get out of the wet before our white friends catch you. Look out for the quinine streaks."

"NEVER be critical upon the ladies," was the maxim of a peer, remarkable for his homage to the sex. "The only way that a true gentleman ever will attempt to look at the faults of a pretty woman is to shut his eyes."

THE firmest friendships have been formed on mutual adversity, as iron is the most strongly united by the fiercest flame.—Colton.

DOMESTIC ECONOMY.

Hints to Housekeepers.

Always use earthenware for whisking eggs in.

Rub vaseline on the lips before going out, to prevent cracked skin.

All stone fruits are considered to be injurious for those who suffer from the liver, and should be used cautiously.

Never partake of hot drinks just prior to going into the frosty air; it is ruinous both to health and complexion.

When the white of an egg after being frothed begins to separate, a few drops of lemon juice added will remedy the trouble.

Soured (unsweetened) condensed milk may have two parts or a little more water added to it, when it may be used in cooking the same as other sour milk.

Marble washstands and mantelpieces can be cleaned by simply washing the surface with warm water, to which a little borax has been added, polishing afterward with a dry cloth.

Bathe the face and hands of a feverish person with warm water that has a bit of common soda dissolved in it. A few drops of alcohol or cologne is often pleasant to use to bathe the sick.

A nurse should use care that no person having wet or even damp clothing should enter the sick room. Never get out of patience with the whims of an invalid, but try to coax and soothe without irritating him.

Children can hardly have too much fresh air in fine weather, and should be wheeled briskly but not carelessly along as straight road as possible. Wheeling a cart or baby carriage down a steep hill is bad for a baby's brain.

The best gloves for little ones are the old-fashioned mittens that have only a distinct thumb, and comprehend the rest of the fingers in a sort of bag. They must be long, and there should be a loop inside the sleeve through which to pass the strings, as this prevents the child from pulling its gloves off, and obviates the temptation to tie the strings too tight, which impedes the circulation, and is very uncomfortable to the little wrists.

Domestic Hints.

POTATO PUFFS.—Put one cup of potatoes in a small pan; add yolk of one egg, two tablespoonfuls of cream, salt and pepper; stir over the fire until hot. Take from the fire; add the well-beaten whites of the eggs; put this mixture into a greased baking dish; bake in a quick oven until brown.

INDIAN SANDWICHES.—To two parts of cooked veal or chicken allow one part of cold boiled tongue; and to each cupful of the mixture, measured after putting through a chopper, add one tablespoonful of melted butter, one teaspoonful of essence of anchovy and one-half teaspoonful of lemon juice. Butter and cut the bread as directed, toast each slice golden brown, spread with the filling while hot and put together. Serve cold.

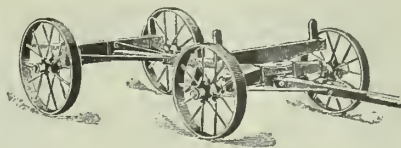
FRICASSEED SHRIMPS.—Put one tablespoonful of butter, one tablespoonful of flour and one teaspoonful of chopped onion in the dish, light the lamp and cook until browned. Add two cupfuls of strained tomato and stir occasionally until thickened. Add two-thirds of a can of shrimps, which have been picked over, washed and drained, and salt and pepper to taste; cover, turn the lamp partly down and simmer for ten minutes, stirring occasionally.

CREAMED CELERY.—Take one small tender head of celery, wash and scrape it quite clean, removing the outer stalks; put one pint of rich milk (part cream, if possible) into a double boiler. Cut the stalks of celery into small cubes and let them boil in the milk till quite tender. Then rub one tablespoonful of butter and the same or a little more of flour into a smooth paste and add it to the boiling celery. Season to taste with salt and pepper and let it boil until it becomes rich and creamy. Serve in a small vegetable dish.

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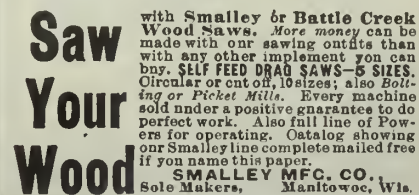
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Feb. 7, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	Feb.	May.
Wednesday.....	65 1/2 @	67 1/2 @ 68 1/2
Thursday.....	65 1/2 @	68 1/2 @ 67 1/2
Friday.....	66 1/4 @	67 3/4 @ 68 1/2
Saturday.....	66 3/4 @ 66	68 1/2 @ 68 1/2
Monday.....	66 1/4 @ 66 1/2	68 @ 68 1/2
Tuesday.....	65 1/2 @	67 1/2 @ 67 1/2

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday.....	5s 10 1/2 d	5s 10 d
Thursday.....	5s 10 1/2 d	5s 10 1/2 d
Friday.....	5s 10 1/2 d	5s 10 1/2 d
Saturday.....	5s 10 1/2 d	5s 9 1/2 d
Monday.....	5s 10 1/2 d	5s 9 1/2 d
Tuesday.....	5s 9 1/2 d	5s 9 1/2 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 01 @ 1 01 1/2	1 05 @ 1 05 1/2
Friday.....	1 01 1/2 @ 1 02 1/2	1 06 1/4 @ 1 06 1/2
Saturday.....	1 02 1/4 @ 1 02 1/2	1 06 3/4 @ 1 06 1/2
Monday.....	1 02 @ 1 01 1/2	1 05 1/2 @
Tuesday.....	1 00 3/4 @ 1 01	1 05 1/2 @ 1 05 1/2
Wednesday.....	1 02 @ 1 02 1/2	1 06 3/4 @ 1 07 1/4

WHEAT.

While the spot market for wheat has held up fairly well since last review, quotable values remaining about as last noted, prices for options have been on the decline most of the week, and this in face of the report that the wheat area of India has been reduced 35%, equivalent to a reduction in the crop, as compared with last year, of 100,000,000 bushels. The world's "visible" supply showed a decrease of 527,000 bushels. Some European countries were stated to be quarantined against Argentine wheat on account of plague, but with all these bullish influences, speculative markets declined. May wheat in Chicago dropped nearly 2c per bushel. Prices of options in this center broke Tuesday to figures of a week ago, but were higher Wednesday, Chicago coming through strong on account of freezing weather—about 30 deg. below zero—at numerous points in the Middle West. An increase in the loading fleet, through ships arriving under charter, has tended to check declines in the local market.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, \$1.00 1/2 @ 1.02 1/2.
December, 1900, delivery, \$1.05 @ 1.07 1/4.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at \$1.02 @ 1.02 1/2; December, 1900, \$1.06 1/2 @ 1.07 1/4.

California Milling.....	\$1 00 @ 1 05
Cal. No. 1 shipping, alongside.....	97 1/2 @ 1 00
Oregon Valley.....	92 1/4 @ 1 00
Walla Walla Blue Stem.....	92 1/4 @ 1 02 1/2
Walla Walla Club.....	82 1/2 @ 1 00
Off qualities wheat.....	80 @ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	6s 8d @ 6s 9d	6s 3d @ 6s 3 1/2 d
Freight rates.....	25 @ 27 1/2	36 1/4 @ 37 1/2
Local market.....	\$1 12 1/2 @ 1 15	97 1/2 @ 1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on Feb. 1st and Jan. 1st:

Tons—	Feb. 1st.	Jan. 1st.
Wheat.....	*204,413	219,989
Barley.....	*62,053	68,497
Oats.....	6,717	6,155
Corn.....	447	491

*Including 134,046 tons at Port Costa, 68,340 tons at Stockton.

†Including 27,112 tons at Port Costa, 22,073 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 15,576 tons for the month of January. A year ago there were 97,558 tons wheat in Call Board warehouses.

FLOUR.

Stocks are not heavy, but are proving more than ample for immediate needs, and market is about as favorable to buyers as for some time past. There is considerable flour moving outward, mostly on contract. Business on local account is of small volume.

Superfine, lower grades.....	\$2 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90

Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

Values for this cereal have continued at much the same range as last quoted, there having been no noteworthy fluctuations during the week. Local inquiry has been largely for common qualities or for barley which will not pass Call Board inspection. The better grades receive attention on export account. A ship arrived this week under charter to load wheat or barley. If latter is taken, rate to be £1 15s to Cork, U. K., for orders, usual option as to final destination.

Feed, No. 1 to choice.....	75 @ 77 1/2
Feed, fair to good.....	60 @ 72 1/2
Brewing, No. 1 to choice.....	87 1/2 @ 97 1/2
Chevalier, No. 1 to choice.....	1 00 @ 1 07 1/2
Chevalier, No. 2.....	— @ —

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

Seller, 1900, new, — @ —.
May, 1900, delivery, — @ — c.
December, 1900, delivery, 69 1/2 @ — c.
Wednesday, at regular noon session of the Call Board for May, 1900, No. 1 feed, 70 1/2 c was bid.

OATS.

The market is not firm at prevailing rates, but operators have not succeeded in obtaining noteworthy concessions in their favor, unless on seriously defective qualities. Buyers are taking hold slowly, hoping to be able to operate to better advantage later on. Compared with values for other feed cereals, prices for best grades of oats are at a tolerably high range.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 15 @ 1 22 1/2
White, poor to fair.....	1 07 1/2 @ 1 12 1/2
Gray, common to choice.....	1 10 @ 1 20
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	90 @ 1 02 1/2
Red.....	95 @ 1 20

CORN.

While stocks are still principally of the imported article, Eastern Large Yellow and White, the local product is beginning to make a wholesale showing as regards large corn. Small Yellow is still rather scarce. Market is easy in tone, but quotations are not materially changed.

Large White, good to choice.....	1 02 1/2 @ 1 05
Large Yellow.....	1 02 1/2 @ 1 05
Small Yellow.....	1 40 @ 1 45
Eastern Mixed.....	1 00 @ 1 02 1/2

RYE.

Demand and offerings are both of slim volume. Values are steady, and indications are there will be no pronounced changes in the near future.

Good to choice, new.....	1 02 1/2 @ 1 05
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BUCKWHEAT.

There is so little doing that values are poorly defined. There is nothing to warrant changing quotations.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

Demand continues good for prime to choice beans, mostly for white varieties, and market is firm at the quotations. There has been considerable inquiry lately, however, for Pink beans and tendency on these has been to more firmness. Recent arrivals of all varieties show a much larger percentage of defective stock than was generally anticipated, only a small percentage of last crop having escaped damage from heavy rains early in the season. Inquiry is mostly on shipping account, and in the filling of these orders defective qualities cannot be utilized.

Pea, fair to good, 100 lbs.....	3 10 @ 3 35
Small White, good to choice.....	3 10 @ 3 25
Lady Washington.....	2 90 @ 3 10
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 50 @ 2 65
Bayos, good to choice.....	3 25 @ 3 50
Reds.....	3 75 @ 4 00
Red Kidneys.....	3 00 @ 3 50
Limas, good to choice.....	5 00 @ 5 15
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

Advices by recent mail from New York give the following review of the bean market, prices quoted being per 60-lb. bushel:

It has been rather a sellers' market again this week. Coupled with the light receipts has been a moderate demand, a considerable part coming from out-of-town, and very firm interior advices, which have encouraged quite a strong, confident holding here of most kinds. Exporters have been able to get a quantity of foreign Marrow at a cost of about \$1.80 @ \$1.85 in bond, and this has kept them from taking much of the domestic stock; but jobbers have bought some lots, paying \$2.25 @ 2.30 for choice old, and \$2.25 for

strictly new. Some very good new are going at \$2.20, and other grades from \$2.15 down to \$2 for poor. It is gratifying to note a substantial improvement in the quality of the new Marrow, due to more careful screening and picking. Of the small beans Pea have sold much the best, and choice lots in barrels are now firm at \$2.20; some bag stock, including several cars of Canadian, brought almost as much. Holders have tried to get \$2.20 for strictly fine Medium, but more of the sales have been at about 2 1/2 c. less. Export orders for Red Kidney were filled early in the week at \$2.25 f. o. b., but for the past day or two a little of the best stock has been held at \$2.27 1/2 @ 2.30, latter now asked. White Kidney very dull. Turtle Soup neglected and nominal. Yellow Eye have had call of late at \$2.35, and the supply is light. California Lima in very moderate supply and jobbing sales mainly at \$3.50. Imported Giants moving fairly at the figures quoted. Further considerable lots of foreign small beans have arrived during the week, including 3,187 bags from Fiume on steamer Pocahontas. Most of these lots were sold to arrive, and there has been good demand for the balance, the best Medium selling at \$1.95, and choice Pea at \$2. Southern black eye peas quiet at \$3.25 @ 3.50 per 2-bushel bag. Green and Scotch steady, but moving slowly.

DRIED PEAS.

Stocks and offerings are light. Market is fully as favorable to producing interest as previously quoted.

Green Peas, California.....	2 00 @ 2 15
Niles Peas.....	2 00 @ 2 15

WOOL.

There is little doing in the local market, as stocks of grease wool have been practically closed out. Foreign and Eastern markets are reported slow. Dealers are now laying lines for the spring trade, and there continues to be as much assurance as is possible at this early date that there will be an active demand and, as a natural sequence, a firm market.

Oregon Eastern, choice.....	13 @ 16
Oregon Eastern, fair to good.....	11 @ 13
Oregon Valley.....	17 @ 20

Humboldt and Mendocino.....	16 @ 17 1/2
Middle Counties, defective.....	9 @ 12
Northern, free.....	11 @ 14
Northern, defective.....	9 @ 11
Southern Mountain.....	9 @ 11
San Joaquin Plains.....	— @ —
San Joaquin Lamb.....	— @ —

HOPS.

Low and unremunerative prices are still current, not only here but throughout the world. Dealers claim it is on account of poor quality, but the quality averages fully as well as in some previous years when much higher values were established. There are too many hops for the demand. When there is a good crop throughout this country and Europe, buyers invariably have their own way and are enabled to operate at very low figures.

Good to choice, 1899 crop.....	6 @ 9
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The following review of the hop trade comes through by recent mail from a New York authority:

Our country exchanges are talking a good deal about the low, discouraging prices that are now ruling in this country for hops, but they do not emphasize strongly enough the fact that is the poor quality of the crop that is contributing so largely to the low average of values. We are firmly of the opinion that growers must either go out of the business or raise a better quality of hops. This applies not only to New York State but to Oregon as well, a great deal of the stock from there having been picked before it was matured, hence of most undesirable quality. If we had a good proportion of fine hops this year there would be a vastly different story to tell, as English buyers would compete strongly with our home buyers for the stock. For several years past it has been the poor quality that has dragged prices down. A fair quantity of hops has been bought in the interior this week, chiefly in range of 6 @ 10c. Business on the local market has also been fair, but not so much in the way of transactions between dealers, as in the deliveries and new sales to brewers. Prices throughout are much the same as last quoted, but the top rates seem more extreme because of the lessened quantity of desirable stock.

HAY AND STRAW.

Receipts of hay have not aggregated quite so large as for preceding week, but there continued to be more than enough to accommodate the immediate demand, and quotable values showed no improvement on the reduced figures last given. For other than select wheat hay, the market was weak at the decline. Occasional sales of high-grade stable hay were made at a slight advance on quotations. Straw was offered at unchanged rates.

Wheat.....	6 50 @ 9 00
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Wheat and Oat.....	6 50 @ 8 50
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	6 00 @ 7 50
Stock.....	4 50 @ 5 50
Compressed.....	6 50 @ 9 00
Straw, @ bale.....	30 @ 45

MILLSTUFFS.

Bran market is lower and unsettled, demand being slow and spot supplies of rather liberal volume. Middlings and shorts are fairly steady. Market for Rolled Barley and Milled Corn was quiet, and changes in price were not sufficient to warrant materially altering quotations.

Bran, @ ton.....	12 50 @ 13 50
Middlings.....	15 00 @ 18 00
Shorts, Oregon.....	12 50 @ 15 00
Barley, Rolled.....	16 50 @ 17 00
Cornmeal.....	23 00 @ 23 50
Cracked Corn.....	24 00 @ 24 50

SEEDS.

The market throughout is ruling quiet, with quotations much the same as last noted, but owing to prevailing inactivity are largely nominal. Spot stocks of Alfalfa Seed are light, but what is on hand in Utah, the main source of supply, is an unknown quantity and impossible to accurately arrive at. The California Alfalfa is not as a rule as clean as the imported and consequently less desirable. Limited quantities of choice domestic would sell to fair advantage, especially if the coming season should prove favorable, but it would not be advisable or profitable to attempt to foist very large quantities upon the market.

Mustard, Trieste.....	3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25

Canary.....	3 1/2 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	7 @ 9

BAGS AND BAGGING.

Market is quiet throughout and is not likely to change materially in the near future. Quotable values remain practically in same position as for several weeks past.

Calcutta Grain Bags, buyer June-July.....	6 1/2 @ —
Calcutta Grain Bags, spot.....	6 1/4 @ —
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ —
State Prison Bags, @ 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/4
Fruit Sacks, cotton.....	6 1/2 @ 7 1/4

HIDES, PELTS AND TALLOW.

The market for hides continues slow and for Wet Salted is lacking in firmness. Prices for Dry Hides are fairly sustained through shipments East. Market for Pelts and Tallow is still in fairly good shape, previous values remaining in force.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 1/4	10 1/4
Medium Steers, 48 to 56 lbs.....	10 1/4	9 1/4
Light Steers, under 48 lbs.....	10	9
Heavy Cow Hides, over 50 lbs.....	10 1/4	9 1/4
Light Cow Hides, under 50 lbs.....	10	9
Wet Salted Kip.....	10	9
Wet Salted Veal.....	10	9
Wet Salted Calf.....	11	10
Dry Hides.....	18	14
Dry Kip and Veal, 11 to 16 lbs.....	17	13
Dry Calf, under 4 lbs.....	18	15
Salted Horse Hides, large.....	2 50 @ —	—
Salted Horse Hides medium.....	2 00 @ —	—
Salted Horse Hides, small.....	1 00 @ —	—
Dry Horse Hides, large.....	2 00 @ —	—
Dry Horse Hides, small.....	75 @ 1 00	—
Dry Colts' Hides.....	50 @ 75	—
Pelts, long wool, @ skin.....	1 00 @ 1 25	—
Pelts, medium, @ skin.....	70 @ 90	—
Pelts, short wool, @ skin.....	35 @ 60	—
Pelts, shealing, @ skin.....	20 @ 30	—
Deer Skins, best summer.....	27 1/2 @ 30	—
Deer Skins, good medium.....	20 @ 22 1/2	—
Deer Skins, thin winter.....	— @ 10	—
Elk Hides.....	10 @ 12	—
Tallow, good quality.....	4 1/2 @ 5	—
Tallow, No. 2.....	4 @ 4 1/2	—
Goat Skins, perfect.....	30 @ 37 1/2	—
Goat Skins, damaged.....	10 @ 20	—
Kid Skins.....	5 @ 10	—

HONEY.

Very little doing in this line, with supplies and demand both slim, as is almost invariably the case at the end of a season when the crop has been light. Market is moderately firm at the ruling rates, with business wholly of a jobbing character.

Extracted, White Liquid.....	7 1/2 @ 8
Extracted, Light Amber.....	7 @ 7 1/2
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	11 1/2 @ 12 1/2
Amber Comb.....	8 @ 10

BEE SWAX.

There is sufficient demand at current values to absorb all offerings of desirable quality.

Good to choice, light, @ lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Beef is in fair supply and is selling at previously quoted range, but the market is not particularly firm at these figures. Veal is not in heavy receipt, but demand at top prices is of very moderate volume. Mutton was not in excessive supply and sold in the main at unchanged rates. Lamb brought about as stiff prices as preceding week. Hogs arrived in fairly liberal quantity, but less than preceding week, and for desirable packing stock values were slightly firmer than previous week.

Beef, first quality, dressed, net $\frac{1}{2}$ lb.	6 1/2 @ 7
Beef, second quality.	6 1/4 @ —
Beef, third quality.	5 1/2 @ 6
Mutton—ewes, 7 @ 7 1/2 c; wethers.	7 1/2 @ 8
Hogs, hard grain fed, medium.	5 1/2 @ 5 3/4
Hogs, small, fat.	5 1/2 @ 5 3/4
Hogs, large, hard.	5 @ 5 1/4
Hogs, acorn-fed.	— @ —
Hogs, feeders.	5 @ 5 1/2
Hogs, country dressed.	5 1/2 @ 6
Veal, small, $\frac{1}{2}$ lb.	7 @ 9 1/4
Veal, large, $\frac{1}{2}$ lb.	7 @ 8
Lamb, spring, $\frac{1}{2}$ lb.	14 @ 15

POULTRY.

Despite tolerably heavy arrivals of Eastern poultry, there was a very good demand and a moderately firm market for choice young domestic and also for extra large and fat Old Hens, the latter bringing \$6 per doz. Turkey market failed to develop much firmness. Ducks and Geese sold at steady figures. Young Pigeons brought good prices. Old were not in active request.

Turkeys, dressed, $\frac{1}{2}$ lb.	13 @ 16
Turkeys, live hens, $\frac{1}{2}$ lb.	11 @ 12 1/2
Turkeys, live gobblers, $\frac{1}{2}$ lb.	11 @ 12 1/2
Hens, California, $\frac{1}{2}$ dozen	3 50 @ 5 00
Roosters, old.	4 00 @ 4 50
Roosters, young (full-grown).	4 50 @ 5 00
Fryers.	4 00 @ 4 50
Broilers, large.	4 00 @ 4 50
Broilers, small.	2 50 @ 3 50
Ducks, $\frac{1}{2}$ dozen	4 00 @ 5 00
Geese, $\frac{1}{2}$ pair.	1 75 @ 2 00
Goslings, $\frac{1}{2}$ pair.	1 75 @ 2 00
Pigeons, old, $\frac{1}{2}$ dozen	1 25 @ 1 50
Pigeons, young	2 50 @ 3 00

BUTTER.

Last week's advanced prices checked the demand so as to cause stocks to accumulate. This week prices were marked down 1 @ 3c in order to clean up accumulations, and at the decline the market was not firm. It is probable, however, that values have nearly if not quite touched bedrock for the present.

Creamery, extras, $\frac{1}{2}$ lb.	27 @ —
Creamery, firsts.	25 @ 26
Creamery, seconds.	24 @ —
Dairy, select.	23 @ 25
Dairy, seconds.	20 @ 22
Dairy, soft and weedy.	— @ —
Mixed store.	14 @ 16
Creamery in tubs.	18 @ 21
Pickled Roll.	— @ —
Parkin, California, choice to select.	19 @ 22
Parkin, common to fair.	16 @ 18

CHEESE.

Stocks of new are not large, but in the general desire to keep supplies cleaned up, the market inclines in favor of buyers. At about 1c under current figures, there would be an active shipping demand which would absorb all that could be furnished. Eastern markets are lightly stocked and firm.

California, fancy flat, new.	11 @ —
California, good to choice.	10 @ 10 1/2
California, fair to good.	9 1/2 @ 10
California Cheddar.	— @ —
California, "Young Americas".	10 @ 12

EGGS.

Further declines have been experienced the past week, although they were less marked than for several weeks preceding. Buyers are operating slowly, expecting still lower prices. At the reduced figures, however, consumers are taking hold quite freely. Eastern fresh eggs can now be laid down in this center for 17 1/2c per doz.

California, select, large, white and fresh.	17 @ 18
California, select, irregular color & size.	16 @ 17
California, good to choice store.	15 @ 16
Eastern, as to section and grading.	— @ —
Eastern, cold storage.	13 @ 14

VEGETABLES.

Early Spring vegetables are coming forward sparingly, mainly from Los Angeles section, and are bringing as a rule good figures. String Beans and Tomatoes were in materially reduced supply, as compared with some weeks previous. Winter vegetables did not make much of a display. Onion market continued firm, especially for best qualities.

Asparagus, $\frac{1}{2}$ lb.	20 @ 25
Beans, String, $\frac{1}{2}$ lb.	10 @ 12 1/2
Cabbage, choice garden, $\frac{1}{2}$ 100.	50 @ —
Cauliflower, $\frac{1}{2}$ dozen	50 @ —
Cucumbers, hot-house, $\frac{1}{2}$ doz.	3 00 @ —
Egg Plant, $\frac{1}{2}$ lb.	12 1/2 @ 15
Garlic, $\frac{1}{2}$ lb.	5 @ —
Onions, Yellow, Cal., good to choice.	1 50 @ 2 00
Onions, Oregon, $\frac{1}{2}$ cental.	1 75 @ 2 25
Peas, Sweet, garden, $\frac{1}{2}$ lb.	2 1/2 @ 4
Peppers, Green Chile, $\frac{1}{2}$ lb.	3 @ 5
Peppers, Bell, $\frac{1}{2}$ lb.	8 @ 10
Rhubarb, $\frac{1}{2}$ lb.	6 @ 7
Squash, Marrowfat, $\frac{1}{2}$ ton.	— @ —

Squash, Summer, $\frac{1}{2}$ box.	1 00 @ 1 25
Tomatoes, Los Angeles, $\frac{1}{2}$ box.	1 25 @ 1 50
Tomatoes, Bay, $\frac{1}{2}$ box.	— @ —

POTATOES.

The potato market presented a little better tone than previous week, arrivals from Oregon not being so heavy. Prices for Burbanks did not show much quotable change, but market was tolerably firm at the figures below noted, especially for choice qualities. Early Rose, Garnet Chile and Peerless were in good request for seed. Sweet potatoes were in light stock and brought rather stiff prices.

Burbanks, River, $\frac{1}{2}$ cental.	65 @ 1 05
Burbanks, Bay counties, $\frac{1}{2}$ cental.	— @ —
Burbanks, Humboldt.	70 @ 1 10
Burbanks, Oregon.	80 @ 1 15
River Reds.	— @ —
Burbanks, Salinas, $\frac{1}{2}$ cental.	— @ —
Early Rose.	1 00 @ 1 10
Garnet Chile.	90 @ 1 05
Peerless.	1 20 @ 1 25
New Potatoes, $\frac{1}{2}$ lb.	2 @ 3
Sweet, River, $\frac{1}{2}$ cental.	— @ —
Sweet Merced.	1 75 @ —

The Fruit Market.

FRESH FRUITS.

Strawberries put in an appearance for the first time this season, in small quantities from Santa Clara, Los Angeles and Palo Alto. They brought the customary stiff figures for initial consignments. Sales of large berries were reported at \$2 per drawer. Apples are offering in moderate quantity, with the proportion of choice to select very small. For best qualities the market is decidedly firm, some of very high grade selling above quotable rates. Common qualities meet with rather slow sale and at no improvement on previous figures, buyers having more to do than sellers with shaping values.

Apples, fancy, 4-tier box.	1 50 @ 1 75
Apples, good to choice, $\frac{1}{2}$ 50-lb box.	75 @ 1 25
Apples, common to fair, $\frac{1}{2}$ 50-lb box.	25 @ 50

DRIED FRUITS.

The market for cured and evaporated fruits remained virtually in same position as at date of last review. While stocks are mostly in strong hands and are in the main steadily held, it is impossible at this date to make sales of noteworthy magnitude at full current figures. Dealers are hoping for a brisk Spring trade, and there is good reason to anticipate the same, as most of the jobbers East and elsewhere who draw to any great extent upon this market are carrying light supplies. Prunes, Peaches, Apples and Figs are all offering in sufficient quantity to admit of wholesale operations, but of other varieties there are no carload lots and no large stocks in the hands of jobbers. Apples are showing considerable weakness on account of Eastern competition. Eastern of prime quality have been offered at 7 1/2c laid down here. The light call which exists for Prunes is still mainly for the smaller sizes, while in offerings the larger sizes predominate, although there are doubts about the small Prune being the cheaper article at the present ratio of values.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, $\frac{1}{2}$ lb.	10 1/2 @ 12
Apricots, Royal, fancy.	12 1/2 @ 13
Apricots, Moorpark.	13 @ 15
Apples, in 50-lb boxes, rings, pressed, fancy.	7 1/2 @ —
Apples, 50-lb boxes, rings, pressed, good to choice.	6 @ 7
Figs, White, fancy pressed.	5 1/2 @ 5 3/4
Peaches, unpeeled, good to choice.	6 @ 7
Peaches, unpeeled, fancy.	7 1/2 @ 8
Peaches, peeled, in boxes.	12 1/2 @ 15
Pears, unpeeled Bartlett's, halved, fancy.	9 @ 10
Pears, halved, unpeeled Bartlett's.	6 1/2 @ 8
Pears, quartered, unpeeled Bartlett's.	6 1/2 @ 7 1/2
Plums, Black, pitted.	6 1/2 @ 7 1/2
Plums, White and Red.	7 @ 8
Prunes, in sacks 40—50s.	4 @ 4 1/2
50—60s.	3 1/2 @ 3 3/4
60—70s.	3 1/4 @ 3 1/2
70—80s.	3 1/4 @ —
80—90s.	3 @ —
90—100s.	2 1/2 @ —
110—130s.	2 @ —
Prunes in boxes, 1/2c higher for 25-lb boxes, 1/2c higher for 50-lb boxes.	— @ —
4 sizes Santa Claras and equal.	2 1/4 @ —
4 sizes San Joaquin and Northern.	2 1/4 @ 2 1/2
Prunes, Silver.	4 @ 7

COMMON SUN-DRIED.

Apples, sliced.	4 @ 5
Apples, quartered.	4 @ 5
Figs, Black.	— @ 3
Figs, White.	3 @ 3 1/4
Peaches, unpeeled.	5 @ 6

Late mail advices from New York furnish the following review of the dried fruit market in the East:

Demand for evaporated apples has continued active this week, exporters taking large quantities, though their operations have been on a lower basis, and the heavy business has been due to the fact that holders have been willing to accept the lower figures bid. Prime have eased off to 6 1/2 @ 6 3/4c, latter figure now extreme, and some sales toward the close reported at 6 1/2c. Choice and fancy have had only a light jobbing movement and tone is easy,

with outside quotations extreme. Apples grading under prime neglected. Demand for sun-dried apples has been light, and, with quite free offerings, prices have eased off in sympathy with the general market; fancy sliced are offering at 5 1/2c, and that figure is about all that can be obtained for finest quarters, though a car of choice heavy packed sold a day or so ago at 5 3/4c; southern quarters rarely of quality to exceed 5 1/4 @ 5 3/4c. Chops and waste also lower and freely offered at outside quotations without attracting attention. Raspberries steady. Blackberries scarce and firm. Cherries just a shade easier; most sales at 15 @ 16c. Huckleberries neglected. California prunes have continued in good demand, but apricots and peaches more quiet and favoring buyers in price.

Apricots, Cal., Moorpark, 1899, $\frac{1}{2}$ lb.	15 @ 18
Apricots, Cal., Royal, 1899, $\frac{1}{2}$ lb.	13 @ 14
Peaches, Cal., 1899, peeled, $\frac{1}{2}$ lb.	18 @ 20
Peaches, Cal., 1899, unpeeled, in bxs, $\frac{1}{2}$ lb.	8 @ 9 1/2
Peaches, Cal., 1899, unpeeled, in bags, $\frac{1}{2}$ lb.	7 @ 9
Prunes, Cal., 1899, $\frac{1}{2}$ lb.	3 1/2 @ 7

RAISINS.

While the market is quiet, there is no uneasiness as to the disposal of remaining stocks, which are light, and are understood to be wholly under control of the Growers' Association. Quotable rates are continued on same lines as previously noted.

F. O. B. FRESNO DELIVERY.

London Layers, 6-crown, $\frac{1}{2}$ box.	— @ —
do do 5-crown, $\frac{1}{2}$ box.	— @ —
do do 4-crown, $\frac{1}{2}$ box.	— @ —
do do 3-crown, $\frac{1}{2}$ box.	1 60 @ —
do do 2-crown, $\frac{1}{2}$ box.	1 50 @ —
Valencia Layers, $\frac{1}{2}$ 20-lb box.	.80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown. 6 1/4 @ — |

Loose Muscatel, seedless. 5 @ — |

Pacifics.—2-crown loose Muscatel, 5 1/4c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c.

Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, $\frac{1}{2}$ lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, $\frac{1}{2}$ lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.

Loose Valencia.—Fancy, $\frac{1}{2}$ lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.

Valencia Clusters.—Fancy, $\frac{1}{2}$ lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Orange market showed little or no improvement. The weather was slightly warmer part of the week, but the demand was not sufficiently improved to materially advance prices. Offerings were of liberal volume, both by auction and private sale. Some extra select Navels went above quotable rates. Lemons continued plentiful and cheap, quotations being close to previous low range, with demand of a slow and light order. Limes were in small supply, in few hands and stiffly held.

Oranges—Navels, $\frac{1}{2}$ box.	1 25 @ 2 50
California Seedlings.	50 @ 1 00
California Mandarin, $\frac{1}{2}$ small box.	40 @ 60
Grape Fruit, $\frac{1}{2}$ box.	— @ —
Lemons—California, select, $\frac{1}{2}$ box.	2 00 @ 2 25
California, good to choice.	1 50 @ 1 75
California, common to fair.	1 25 @ 1 50
Limes—Mexican, $\frac{1}{2}$ box.	5 00 @ 5 50
California, small box.	75 @ 1 25

NUTS.

Almonds are quotably lower and are receiving at present little attention at any price. Walnut market is dull at nominally unchanged figures, with stocks now on market mostly of rather ordinary quality. Peanuts are being offered sparingly and values are being well maintained.

California Almonds, shelled.	15 @ 17
California Almonds, paper shell, $\frac{1}{2}$ lb.	10 @ 11
California Almonds, soft shell.	8 @ 9
California Almonds, hard shell.	5 @ 6
Walnuts, White, soft shell.	10 @ 11
Walnuts, White, California, standard.	9 @ 10
Chestnuts, California Italian.	9 @ 10
Peanuts, California, fair to prime.	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.	6 @ 6 1/2
Pine Nuts.	5 @ 6

WINE.

The market is quiet, and there is nothing at the moment to warrant anticipating in the near future any radical changes in either quotable values or the general tone. Dry wines of 1899 are quotable wholesale at 15 @ 18c per gallon, as to quality and other conditions, San Francisco delivery. Buyers are holding off as much as possible, but when transfers are effected they are at figures within above range, unless it be for an inferior article of wine, the latter sort being difficult to move at any figure and is not quotable.

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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{2}$ sacks.	126,726	3,539,711
Wheat, centals.	116,865	2,904,895
Barley, centals.	106,791	4,183,454
Oats, centals.	10,550	593,768
Corn, centals.	1,120	91,839
Rye, centals.	1,830	88,075
Beans, sacks.	13,186	312,497
Potatoes, sacks.	17,797	830,854
Onions, sacks.	549	126,549
Hay, tons.	3,010	106,851
Wool, bales.	45	35,636
Hops, bales.	271	8,831

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{2}$ sacks.	118,724	2,319,115
Wheat, centals.	135,601	2,581,157
Barley, centals.	19,891	3,276,045
Oats, centals.	772	28,107
Corn, centals.	366	11,847
Beans, sacks.	247	19,187
Hay, bales.	4,600	75,232
Wool, pounds.	80,3 6	3,845,087
Hops, pounds.	68,076	884,732
Honey, cases.	7	3,253
Potatoes, packages	3,204	51,967

California Dried Fruit at New York.

NEW YORK, Feb. 7.—California dried fruits: Fairly active and firm. Evaporated apples, common, 5 1/2 @ 6c; prime wire tray, 6 1/4 @ 6 1/2c; choice, 7 @ 7 1/2c; fancy, 8 @ 8 1/2c. Prunes, 3 1/2 @ 6c. Apricots, Royal, 13 @ 15c; Moorpark, 15 @ 18c. Peaches, unpeeled, 7 1/2 @ 9c; peeled, 19 @ 22c.

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**TO
ANYBODY.**

CORRESPONDENCE.

Notes and Comments.

TO THE EDITOR:—In our Eastern agricultural journals complaints come from farmers that all kinds of live stock are too low for a living profit to the producer. Who is to blame? It certainly is not the fault of the market or of the consumer. It must then fall on the producer. As a rule, the farmer keeps too much poor, unprofitable live stock. Quality costs less to keep and brings better prices; so do the products of animals of the best quality when sent to market in good form. This is patent in neat packages of butter, milk, eggs and other farm products. In fact, this holds good of all products for near-by or distant markets. Appearances are always appreciated by buyers, who freely pay for quality and fine show. In Paris I saw this exemplified, not only in the general city stores, markets and groceries, but in the grandest market of the world—the Halles Centrales—where even a leg of lamb, a ham of veal, a side of beef, a roll of sausage and other supplies were decorated with taste. A cornucopia of delicately perforated paper showed off the cut margin of these hams of veal, of lamb, of pork, etc., garnished with pinks, roses or violets, and made the gustatory nerves tingle with anticipated delight. In fact, in the fall and winter, not only were belles and beaux, matrons and maids, men and boys decorated with violets or other flowers, according to personal taste, but uniformed lackeys displayed a taste and fashion peculiarly French. In marketing, this tasteful show-off brought its cost with profit. If it pays to show off marketable products with taste and neatness in France, are we so far behind in refinement that we may not also profit by so artistic a hint? In fact, I am convinced that taste and refinement are inheritable qualities. At all events, it is inborn in the French people. Were our transcendently more beautiful women dressed with such taste and profusion of ornamentation, they would be too angelic for anything but admiration. But, thanks to a kind Providence, our beautiful women are both good, practical and human—good as sweethearts, good as wives and noble as mothers—Christian mothers.

But what has this to do with the improvement of live stock? Very much in every way. Mankind stands at the head of all animals, and the grander the man the better and more useful to our race will be our helpful animals for our food, our clothing and labor supply. As the best man is the most valuable to civilization, so the best of every product, both animal and vegetable, is also most useful to mankind. A well-fed, well-dressed, well-housed humanity is an honor to civilization and to God.

The producer is a most important factor in the well being of our race. And when we fully realize the true relation of capital and labor, both will be duly appreciated and honored. Divorcement can never come to such a heaven-decreed union. In the magnificent industries of the great West these

united powers must produce wealth, comfort, health, longevity and a nobler civilization. In California there is dormant gold in her mines, dormant gold in her grain fields, dormant gold in her fruits, and life and joy in her mild climate and ever-blooming flowers. To me, who have enjoyed so much of the scenic grandeurs of California, there has come a benefaction and appreciation in my life ideal of the beautiful and the sublime; and, in the anticipation of the possibilities of the vast developments of the useful, a sad regret that in all human probability I shall not live to see and know of the blessed fruition of the future of California's grandeur. Yet it will bless those who shall live in that day of her glory. With this regret comes a counter hope that by spiritual telescoping we who are so fortunate as to inhabit the celestial eternity may have added to our heavenly felicity a kaleidoscopic view of the earthly progress. Though anticipation is a delight, practical participation possesses many substantial blessings worth enjoying. So I return to the bright first page of the PACIFIC RURAL PRESS and read with pleasure the autographic fac simile letter of Mr. Frank A. Mecham, whom I expected to have known through my good friend Walter S. Fritsch of Petaluma. This letter proves my predicate in the outset: Breed better animals, make your grain fields more productive, your farms more profitable, your lives more happy and useful, and your profits larger; and give your sons and daughters better educational and social advantages, thus brightening the world in which you live and making the future more hopeful.

In my next letter I shall endeavor to be strictly practical.

New York. A. S. HEATH, M. D.

Beet Sugar Statistics.

A recent dispatch from Washington says: Two-thirds of the world's sugar is now produced from beets. Prior to 1871-72 the world's production of beet sugar had never reached a million tons. In the present crop year, according to the latest estimates, it is 5,510,000 tons, while the cane sugar crop, which in 1871-72 was 1,599,000 tons, the present year is 2,904,000 tons. Thus cane sugar production has scarcely doubled during the period under consideration, while that from beets has more than quintupled. Meantime the price has fallen more than one half, the average cost in foreign countries of all sugar imported into the United States in the fiscal year 1872 being 5.37 cents per pound and in 1899 2.39 cents per pound.

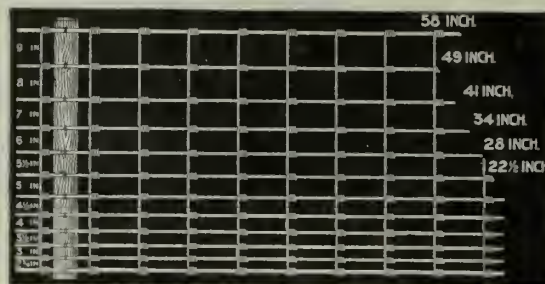
These facts are shown by a tabulation prepared by the Treasury bureau of statistics, in response to demands for information regarding sugar production which have followed the meeting of Congress and prospective consideration of matters relating to the sugar-producing islands which have recently come into closer relations with the United States.

No development of the world's production of foodstuffs has been more rapid or striking than that with reference to beet sugar. In 1854-55 the total beet sugar crop of the world was but 182,000 tons; by 1864-65 it had reached 536,000 tons; in 1874-75 it was 1,219,000 tons; in 1884-85, 2,545,000 tons; in 1894-95, 4,792,793 tons; in '99-1900, 5,510,000 tons. In 1854-55 beet sugar formed 13% of the world's total sugar crop and in 1899-1900 it formed 66%. The sugar-producing area of the world in less than half a century has been shifted from the tropics northward, and the farmer of the temperate zone has shown the ability not only to compete with the low-priced labor of the tropics, but in doing so to reduce by one-half the cost of the article produced.

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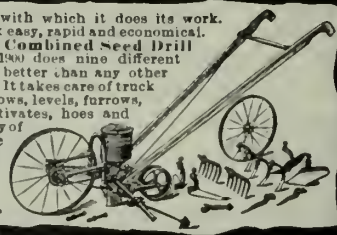


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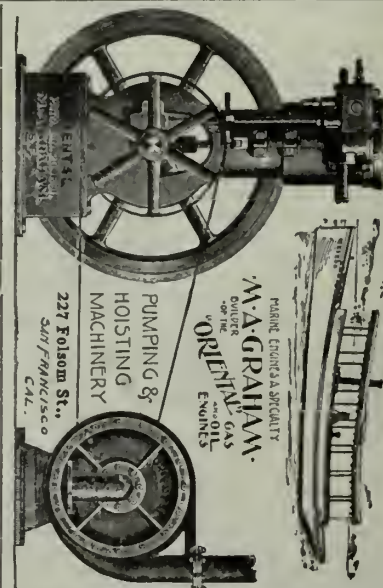
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and Pure Potash.**

T. W. JACKSON & CO.,
Sole Agents, - No. 123 California Street,
SAN FRANCISCO, CAL.

Patrons of Husbandry.

From the Worthy Master.

TO THE EDITOR:—If the secretaries of Pomona and subordinate Granges would send to the PACIFIC RURAL PRESS a list of the officers installed and also the addresses of the Master and Secretary, the Master of the State Grange would be able to communicate with them.

STATE GRANGE COMMITTEES.—The members will please notice the committees mentioned on page 112 of the Journal of Proceedings of California State Grange. The chairman of each committee is expected to keep in touch with the members of his committee. The members of the Order will address the chairman of the Committee on Co-operation, relative to buying and selling, for instance, and concerning the free market, the chairman of the Legislative Committee, etc.

Thus, matters of importance can be well considered and presented to the State Grange by the chairmen of the respective committees.

LEGISLATION.—On page 92 of the Journal of Proceedings are several resolutions pertaining to legislation, concerning which I hope the members will aid the Legislative Committee, that their hands may be upheld in carrying out the special objects for which we have promised to work.

PROCEEDINGS.—A copy of the Journal of Proceedings of the thirty-third session of the National Grange has been sent to each Past Master of our State Grange and to the Master of each Pomona and subordinate Grange. There are a few copies left with our Secretary. It is expected that the reports and doings of that body will prove profitable reading.

TO LECTURERS.—In some Granges I find them so full of business that the two hours seems altogether too short. Life seems so full, I do not see how any Grange can lack in interest. No Grange ever went dormant that had a good Lecturer's half hour. Worthy Lecturer Bachelder believes in work all along the line. Speaking for New Hampshire, he said the condition of the Order throughout that State was very satisfactory. The Grange Fire Insurance Company was organized ten years ago. It has paid all losses and expenses promptly at a cost to the insured of only 1 1/2% for nine years, and has over \$5,000,000 in policies to-day. In economy and safety it is second to no other company in the world. There are 240 subordinate and 16 Pomona Granges. The State is divided into thirty-two districts, with a Deputy in each, who visits each Grange twice during the year. The Pomona Granges were divided into two districts and a deputy in each, who visited each twice during the year. Several officers in the State Grange have visited 100 Granges each during the year, with no pay, except expenses, which have not reached \$300 altogether.

THE SECRET OF IT.—The success and strength of the Grange in New Hampshire is the result of the active leadership and service of 1000 members, who do their very best without compensation. We may profit by their example.
G. W. WORTHEN.

Tulare Grange and the Wide Tire Law.

TO THE EDITOR:—Tulare Grange met at its hall on Saturday, Feb. 3. The Committee on Good Roads reported one of the special objects for calling the Legislature to meet in extra session was to repeal a law approved March 20, 1897, known as the Wire Tire law. The subject was discussed at length and the Worthy Master and lecturer were requested to formulate the views of the Grange, protesting against the repeal of the law but recommending its amendment. The committee later submitted the following protest to the Legislature, which was approved by the Grange, and the secretary directed to send it to Hon. E. T. Cosper for presentation to the Legislature:

To the Legislature of California, Senate

and Assembly, in special session at Sacramento.

Tulare Grange No. 198 of California, being informed that one of the purposes assigned by the Governor for calling you to meet in special session is to repeal a law approved March 20, 1897, and known as the Wide Tire law, herein respectfully present to you our views on this law, its importance to every taxpayer, its great necessity if we are to have good roads, and our earnest protest against its repeal.

Wire Tire laws are enforced in all European countries and in several of the Eastern States. In countries where the best and most costly roads exist, there the use of wide tires is most rigidly exacted. The enactment of a Wide Tire law has been for many years agitated and asked for in our State and every Bureau or Commission of Highways we have had has urged its enactment as essential to good roads. The present Wire Tire law has been prepared and recommended by the Bureau of Highways. Many colleges of agriculture and experimental stations have made exhaustive trials of the merits of wide and narrow tires for use on the farm and public highway, notably that of Missouri, extending over a period of nearly two years, and all are unanimous in their approval and recommendation of wide tires for both farm and road, and specify 6-inch tires as the most suitable size for both. In the face of all this proof of the usefulness and necessity of wide tires in packing and making roads and in lightness of draft on all roads in ordinary conditions, we hold and we believe your Honors will agree with us that it will be a great moral wrong to repeal the law before it has been tested. Give the law a fair test and then if the community desires it repealed we offer no protest. But we know if wide tires once come into use their advantage will be recognized and acknowledged, and we believe all classes of roads—macadam, rock, gravel or earth—can be kept in better repair than they are now at one-fourth the present cost.

We know the bill is defective, in that it contains what we suppose to be several typographical errors, by reason of words being left out. We ask that you amend the law in this respect, but we protest against any reduction of the width of tire from that now required. We believe buggies, carriages, spring wagons and spring carts kept for family use should be exempt from the law.

We ask that there be no extension of time in which the law is to come into operation so far as it applies to wagons imported, manufactured or offered for sale in this State. Such people have had three years' notice of the enforcement of the law, and they should not be now tolerated in their violation of it. Where the tires on their wagons are not in accordance with the requirements of the law, they should be rigidly required to put on tires that are of a width the law specified.

This will make the wagon more saleable, it will strengthen the wheels, give greater life to the wagon and better results and satisfaction to the owner and user.

We hear it claimed by some—we do not know it ourselves—that the strict enforcement of the requirements of the law against wagons now in use will be burdensome on a few who have not means to put wider tires on their wagons, and we think this a very poor excuse, considering the length of time they have had notice; we believe such people never will get ready. Still, we do not object to an extension of time in which the law, as applicable to wagons, shall be enforced, although it will be virtually extending the time for which we must endure bad roads.

In evidence of the advantages of wide tires we refer you to Farmers' Bulletin No. 95, "Good Roads for Farmers," U. S. Department of Agriculture; to the bulletins of the Colleges of Agriculture of Washington and Missouri, and to the reports of our California Commission of Highways, 1896, page 31, "Width of Tires." We ask that you amend the law, but do not repeal it.

Other proceedings of Tulare Grange will be presented in our next issue.

Joint Installation.

TO THE EDITOR:—Stockton and Union Grange of Lodi will hold a joint installation of officers at Stockton on Saturday, Feb. 17th. The Grange will be called to order at 11 A. M., with a Harvest Feast at noon. Bro. G. W. Worthen, Master State Grange, will install the officers in the afternoon. Stockton Grange will make every effort to hold an interesting session, which all patrons of other counties are cordially invited to attend and are assured of that welcome for which the Grange is always noted.
N. H. Root,
Stockton, Feb. 3. Master.

NEW YORK, Nov. 30, 1892.
Mr. C. E. Brewster, Dear Sir:—Last June, when you first called my attention to Tuttle's Elixir, on looking over your circular I thought this is another fraud cure-all and I won't touch it, but you went at me so much in earnest and talked in such a manner that showed me you believed in it. I ordered a dozen to try it. Since I began to use it I have not failed to cure anything you told me the Elixir would do. Please send me two dozen at once, and when you open your New York office, as you wrote me you thought of doing, you can count me to help you all I can, as it is a pleasure to me, although I am kept very busy looking after five stables, sixty-seven men and 135 horses, to speak a good word for Tuttle's Elixir, as it has saved me a heap of time and money. I had I can work my horses while treating them with the Elixir and get better results than by older methods, where I kept them tied in the stable eating their heads off. A friend of mine that has used it on his runners for a body and leg wash tells me he has never found its equal. Hoping you will meet with the success your valuable remedies deserve, I remain
Yours truly, GEO. B. HOLLYER,
Supt. N. Y. Biscuit Co.'s Stables.

The Prevention of Black Leg by the Use of Black Leg Vaccine.

A successful and profitable treatment must be one that will not only prevent black leg without hindering the growth of the animal, but the process must also be cheap in cost and simple in its application. This is exactly what is true of the black leg vaccine treatment which was discovered in Europe sixteen years ago, where it was favorably received and soon became a popular remedy.

In 1895 the Pasteur Vaccine Company introduced the original blackleg vaccine into this country, and since that date it has been successfully used upon nearly 2,000,000 head of cattle in black leg districts, with the result that it has been endorsed by Government and State officials, recommended by the most prominent veterinarians of the country, and used by the leading stockmen, who have been loud in their praises of the valuable remedy.

To obtain the full benefit of the treatment, calves should be vaccinated before black leg breaks out among them; but even then it is not too late to use the remedy with profit, as the further spread of the disease can thereby be duly checked, and the vaccinated animals can continue to graze on the infected pasture without fear of their taking the disease.

The Pasteur Vaccine Company has opened a branch office at 213 Examiner building, San Francisco, Cal.

LORD & THOMAS, advertising house of Chicago and New York, have issued a pamphlet of value to agricultural advertisers. It contains a list of farmers' journals in the United States, with circulations claimed, and other information, and will be sent free to any one who writes for it.

THOSE intending to plant watermelon, cantaloupe, forage crops, or other seed, might write to the Alexander Seed Co., Augusta, Ga., who handle those seeds. They have just issued an illustrated seed catalogue which they send free on request.

WANTED.

About 2000 Hard Shell or Bitter Almond Seedlings.

A. J. S., RURAL PRESS OFFICE, S. F.



Monarch Grubber and Stump Puller.
HOOKER & CO.,

16 and 18 Drumm Street.....San Francisco.

ELGIN Watches keep accurate time.
Sold by jewelers in cases to suit.
Prices reasonable.

Catalogue Free.
Special Introductory Price.

Weight, 600 lbs.
Will Carry 4000-lb. Load.
Most Profitable Truck Made,
both to
Dealers and Farmers.

Will Couple Out to Any Length.
Front Axle with Hounds.
Any Size Wheels, Any Width.
Sizes, Regular 24 and 34-Inch, 4-Inch Tire.

Strongest, Best and Neatest

HANDY WAGON

MADE.

All Steel Except Tongue and Coupling Pole.

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FARM : : :
PLATFORM **TRUCK.**

W. J. ANDREWS, Room 37, Crocker Bldg., San Francisco, Cal., Gen'l Agt. for Coast States.

Manufactured
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crushes, cuts, lifts, pulverizes, turns, aerates and levels all soils, for all purposes under all conditions. Made entirely of cast steel and wrought iron, they are indestructible. They are the cheapest and best riding harrows and pulverizers on earth. Various sizes, for various uses, 3 to 13 1/2 feet. We mail catalogue and booklet, "An Ideal Harrow," free.

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Address **DUANE H. NASH, Sole Mfr., Millington, N. J.** or **Chicago, Ill.**
MENTION THIS PAPER.

HAWKEYE STUMP PULLER...

Makes a Clean Sweep of Two Acres at a Sitting.

A man, a boy and a horse can operate it. No heavy chains or rods to handle. You cannot longer afford to pay taxes on unproductive timber land. Illustrated catalogue FREE, giving prices, terms and testimonials, also full information concerning our I. X. L. Grubber, Iron Giant Grub and Stump Machine, 2-horse Hawkeye and other appliances for clearing timber land.

853
MILNE MFG CO., 8th ST. MONMOUTH, ILL.
ADDRESS **MILNE BROS. FOR**
SHEPARD PONY CATALOGUE.



Flowers and Ferns in the Home.

TO THE EDITOR:—I have just been reading your valuable paper that my father, Ira W. Adams of Calistoga, sends me and I thought I would tell you of how I have ferns and flowers from late in the fall until late in the spring. If you see fit you may publish it, as it may brighten some home that does not raise tame flowers.

In the early spring when the first Blue Bells (some call them Baby Blue Eyes) come in blossom I take a knife and saucer or fancy dish and go out and dig up a vine, planting it in my dish and filling up around the plant with more vines or plants. By constantly keeping them wet they will continue to grow and bloom for two or three weeks, then the vines will turn yellow and I throw them out and gather more. I also do the same way with ferns that I gather along the creek banks, but get them in the fall, and can keep them in a bedroom where they will grow and do nicely. I think it seems more cheerful for a husband to come in, especially if he likes flowers, and see these bright little flowers growing in the house. I am sure it is a rest for a tired woman, going about her house work, to glance at these beautiful little flowers when she has not time to go out into the fields or on the hillside to admire their beauty.

MRS. CHAS. A. CARNER.
Potter Valley, Mendocino County.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR WEEK ENDING JAN. 23, 1900.

- 641,922.—BIT STOCK—W. L. Baumgardner, Watsonville, Cal.
641,757.—CIGAR BOX—M. Blaskower, S. F.
641,933.—LEADED GLASS—Childs & Cantrell, Spokane, Wash.
641,938.—RAISIN SEEDER—C. S. Cox, Fresno, Cal.
641,939.—RAISIN SEEDER—Cox & Langley, Fresno, Cal.
641,951.—LOGGING JACK—A. M. Gilchrist, South Bend, Wash.
641,955.—PRUNE DRIER—F. Hampton, Canby, Or.
641,771.—WAGON GEAR—S. M. Harris, Cheney, Wash.
641,958.—THAWING EARTH—A. Heitzelmann, S. F.
641,960.—EARTH AUGER—J. Herfert, Tucker, Wash.
642,045.—SAWING MACHINE—H. G. Locke, Ukiah, Cal.
641,722.—BOX—A. C. McCandless, Los Angeles, Cal.
641,716.—DREDGER—B. J. Methvin, Tacoma, Wash.
641,990.—ORCHARD HEATER—P. Neyens, Dunsmuir, Cal.
642,006.—FANNING MILL—E. Rouse, Weston, Or.
641,773.—IRONING BOARD—G. T. Simpson, Baker City, Or.
642,058.—LOAD GATE—G. D. Norswick, San Jose, Cal.

THE advertisement of the Hartman Manufacturing Company of Elwood City, Pa., gives a correct idea of their Steel Rod Picket Fence in combination with ornamental steel gate. Park and county commissioners, school trustees and other public officials, as well as private citizens, would do well to look into the quality and merits of this fence. Write for catalogue to Elwood City, Pa., or 309 Broadway, New York City.

Rape and Speltz and Bromus.

Greatest, cheapest, richest food on earth these three make. Wonderful testimonials on same. See Salzer's Big Catalog, sent you for 5c. postage and this notice. John A. Salzer Seed Co., La Crosse, Wis. [F]

Industrial Notes.

—The South African war is costing England \$5,000,000 per week.

—A hundred bills before Congress propose to obliterate "the trusts."

—Oregon's lumber output for 1899 was 669,650,000 feet; Washington's, 723,000,000 feet.

—The Southern California Ry. Co. in '97 showed net earnings of \$57,007; in '98, \$479,285; for '99, about \$725,000.

—The War Department will send 400 soldiers to Alaska early next spring for service in the Cape Nome district.

—It is estimated that a double cable from San Francisco, via Guam, Manila to Hongkong, will cost about \$30,000,000.

—Near San Luis Obispo, Cal., along the line of the Southern Pacific coast line, about 2000 workmen are engaged in railroad work.

—The assessed valuation of property in Oregon for 1899 is \$120,287,879. This is the lowest total since 1890. The decrease since 1893, the year of highest valuations, has been \$47,801,026.

—During '99 there were 7366 industrial establishments in Japan, of which 2968 employed motive machines and 4398 were without mechanical motive power. The first group includes 274,000 workers and the second 140,000, or a total of 414,000 workers. The industrial consumption of coal has increased there from about 278,000 tons in '93 to over 2,000,000 tons in '99.

—The baled hay shipped from San Francisco for the American army in the Philippines is compressed by a new process. The hay is put up in bales cylindrical in form, about the size and shape of an old-fashioned nail keg, 18 inches high and the same diameter. When baled in this shape the hay is hard as a board. The bales weigh about 145 pounds. The hay is hand-cut in pancake form. The hay pancake or layers, which make the bale, are about 3/4-inch thick. The most compact bale of hay put up by the old style required 160 cubic feet of space per ton. The new way hay takes 50 cubic feet of space per ton.

—According to the last census the wealth of the United States in 1890 was \$65,037,091,197, of which real estate and improvements figured at \$39,544,544,333; mines and quarries, \$1,291,291,579; gold and silver, \$1,158,774,948; mills, machinery and stock on hand, \$3,058,593,441; railroads, streets and steam, \$8,685,407,323; telegraph, telephone, shipping and canals, \$701,755,712; miscellaneous, personal estate, etc., \$7,893,701,821. The increase of wealth from 1880 to 1890 was 49%. A proportionate increase from 1890 to 1900 would make the wealth of the United States today about \$100,000,000,000. At the same rate of increase the wealth of the United States in 1950 should be about \$608,475,000,000.

—The United States has 184,532 miles of railroad, Germany 29,984, France 25,862, European Russia 25,357, Great Britain 23,534, British India 21,543. The United States has 36,746 locomotives, Great Britain 19,602, Germany 16,842, France 10,502, Russia 8748, British India 4258. Great Britain has more locomotives per mile than any other country, owing to the congestion of her population. She also has more passenger cars, for the same reason, because her coaches have from 30% to 50% less capacity than those of the United States. Her passenger cars number 62,592, while those of Germany number 34,250, and those of the United States 33,893. As for passengers, Great Britain's yearly record is 1,062,911,000, while that of the United States is 698,342,000, Germany's 646,431,000, France's 382,240,000, British India 160,000,000, Russia 97,000,000. The average journey in the United States is much longer than that of the European countries, notably than that of Great Britain, where the large number of passengers is due greatly to the enormous suburban service in and about London. In freight here are the best yearly records: United States, 913,000,000 tons; Great Britain, 437,000,000; Germany, 276,000,000; France, 120,000,000; Russia, 97,000,000; British India, 39,000,000.

What Our Advertisers Usually Say.

SANTA ROSA, CAL., Jan. 31, 1900.

PACIFIC RURAL PRESS:—Enclosed please find check for \$18.35 for our advertisement in your paper. We have been doing a rushing business and are well pleased with our advertisement. Will send you a better or rather a larger one next fall. Cordially yours,
W. H. SCHIEFFER & CO.

SPRAY PUMPS.

Nozzles for Tree Spraying and Whitewashing. Disinfectants for Chicken Houses, Barns, Stables, Dairies, etc. Walnwright's Nozzles and Pumps are the Best and Cheapest. Catalogue sent. Agents wanted. Wm. Walnwright, Mfr., 1409 Jackson St., S. F.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds. 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs, Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A.J.C.C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale

POULTRY.

TRACY POULTRY YARDS, Tracy, Cal. Wm. M. Langdon, Prop. Specialties: B. P. Rocks and S. C. W. Leghorns. Eggs \$1.50 per 13. Fine lot of Plymouth Rock roosters for sale reasonable. Write for prices.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Buff Cochins, Barred Plymouth Rocks, White and Brown Leghorns, White Wyandottes, Black Minorcas.

WOOD & CO., Danville, Cal. Vigorous, thoroughbred White Leghorn, Brown Leghorn, Black Minorca and B. Plymouth Rock cockerels for sale, singly or in lots. Price \$1.00 each.

WHITE WYANDOTTES & LEGHORNS. Pure. Eggs cheap. A. Warren Robinson, Napa, Cal.

WILLIAM NILES & CO., Los Angeles, Cal. Poultry, Belgian Hares. Imported pedigreed stock.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SWINE.

BERKSHIRE, POLAND-CHINA & DUROC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

P. H. MURPHY, Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

J. P. ANHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Hogs

SHEEP AND GOATS.

C. P. BAILEY, San Jose, Cal. Angora Goats and Persian Fat-tailed Sheep. Catalogue free.

For several different breeds of Poultry, including two breeds of Turkeys, and Pecan Ducks,

Address **SAM'L M. COPPIN**, Pleasant Grove, Sutter Co., Cal.

THE HALSTED INCUBATOR CO.

1312 MYRTLE ST., OAKLAND, CAL.
100-Egg, \$16; 180-Egg, \$24; 320-Egg, \$45.
Brooders, Thermometers, Fluid, etc.
SEND FOR CIRCULAR.



310 First Premiums

Awarded to the **PRAIRIE STATE INCUBATOR**. Guaranteed to operate in any climate. Send for catalogue. **PRAIRIE STATE INCUBATOR CO.**, Homer City, Pa.

FANCY POULTRY.

We keep all the leading varieties. Have 60 breeding



yards. Why not improve your stock. Man's of the Improved Pacific Incubator. Absolutely self-regulating, hot water. Send stamp for our catalogue of Incubators, Wire Netting, Blooded Fowls and Poultry Appliances generally. Remember the Best is the Cheapest. **PACIFIC INCUBATOR CO.**, 1317 Castro St., Oakland, Cal.

THIS IS IT.

The incubator which has put an end to all hatching worries and difficulties. Its simplicity in operation and its uniform success in hatching every fertile egg makes



THE PETALUMA INCUBATOR the best investment you can make. There's no uncertainty about its work. And then, it's built to last. 4 sizes—64 to 324 eggs. We pay freight anywhere in U. S. Handsome catalogue free. **PETALUMA INCUBATOR CO.**, BOX 19, PETALUMA, CAL.

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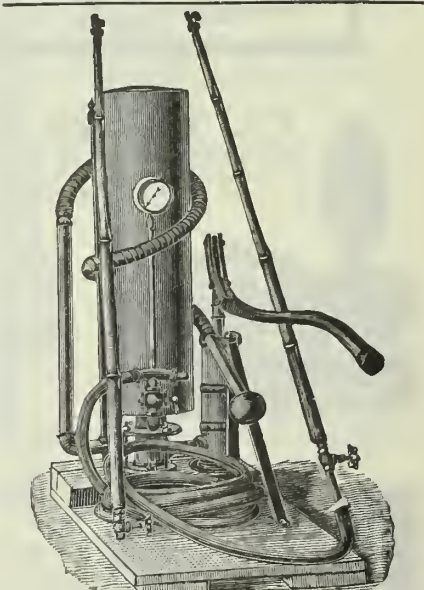
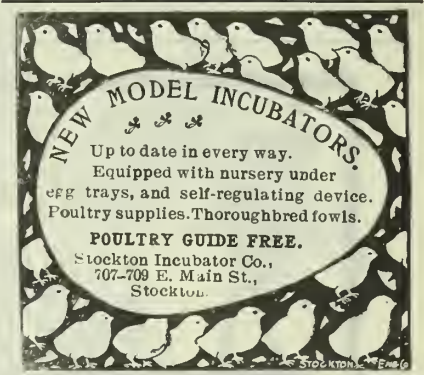
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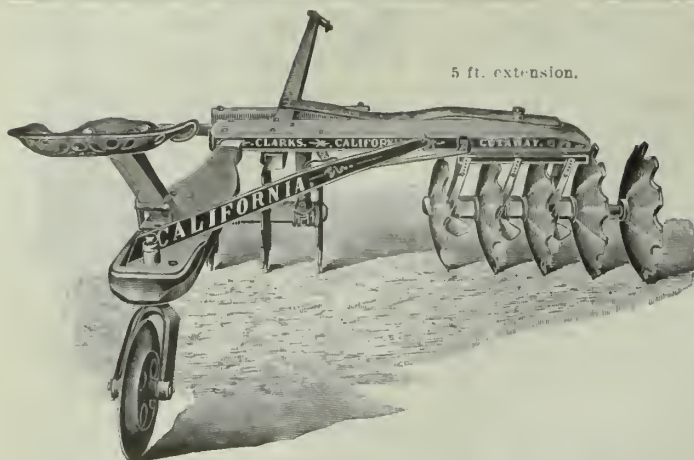
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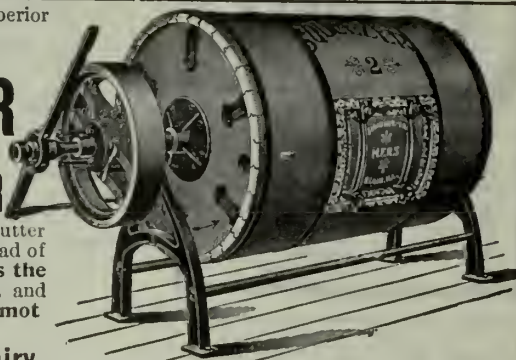
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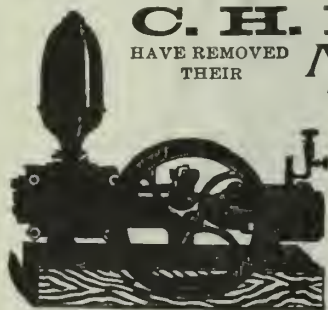
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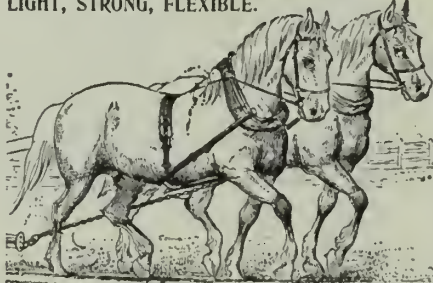
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 7.

SAN FRANCISCO, SATURDAY, FEBRUARY 17, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Blossoms of the English Walnut.

Not only does the present commercial importance of the English walnut product warrant prominent reference to the tree, but the current interest in extending its culture into new regions invites such reference, because so many have not had opportunity to become acquainted even with elementary facts in the growth and fruiting of the tree. It is true that the present product of about 500 carloads, with a valuation of nearly a million dollars, comes almost entirely from four southern counties, and largely from two of them, and that the product from this area may soon double, and yet there is also a very strong walnut interest in other parts of the State and planting is continually going on, though not in large areas. The area of adaptation to the walnut is not so narrow as is sometimes thought, but it is a fact that in extending the planting the utmost attention has to be given to selection of varieties which are satisfactory in growth and productive. If planting proceed with this in view and upon proper soils there is warrant for the belief that the walnut acreage may be profitably extended.

In his fifth biennial report B. M. Lelong, secretary of the State Board of Horticulture, gave a very interesting account of his study of California walnut growing and we are under obligation to him for permission to present



Walnut Catkins or Staminate Blossoms.



Catkins Below and Pistillate Bloom Above.



An Instance of Abundant Staminate Bloom.

to our readers some of the features of his work with pen and camera. The question of the blooming of the walnut is of the utmost importance, both because of its peculiar manner and because of the behavior of different varieties in presenting their bloom in proper time to escape frost and to achieve the indispensable act of pollination. The walnut does not produce perfect blossoms as do most of our fruit trees, because the sexual elements are not enclosed in a single flower. In fact, as the term flower is usually understood, the walnut has no flowers at all. The long tassels which abundantly appear pendant from the sides of the twigs are hardly flower-like, but they are really strings of flowers which produce large quantities of pollen. These often appear as the only bloom upon the tree, as the first engraving shows, and in that case there can be no nuts because this form of bloom never "sets" or makes fruit. The bloom which makes the fruit is, however, even less like a flower than are these tassels, or catkins, as they are called. In the second engraving, at the top of the shoot are two peculiar vase-like bodies with little plumes curling out from their apices. These plumes are the pistils, and if they are closely observed their feather-like form will be seen to glisten with glutinous secretion. Upon this retentive surface the pollen from the catkins is caught as it circulates in the air or falls in a shower, and the lodgment of this pollen enables the pistil to discharge its function and the lower part of the vase-like body will become ere

long the walnut with its rich kernel enclosed.

The walnut to be productive must have therefore both these forms of bloom at about the same time. It is common for the pistils to appear on the young tree unaccompanied by the catkins, and then there can be no nuts unless pollen is carried by the wind or by other agency from the catkins on some other tree. How long the pollen is effective after the drying of the catkins we do not know, but we have observed that pistils, appearing a good many days after the catkins have apparently dried are still pollinated by them, for the tree is isolated, for aught we know, half a mile from other walnut trees. This agrees with the facts Mr. Lelong records to the effect that the pollen preserves its fertilizing power indefinitely. Late blooming of the tree and approximate coincidence of both forms of bloom are, however, of advantage; and the superiority of some varieties for certain locations, owing to their season of bloom, has been clearly shown in our columns by Felix Gillet of Nevada City, who has made these things a specialty for more than a quarter of a century.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, February 17, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Walnut Catkins on Staminate Blossoms; Catkins Below and Pistillate Bloom Above; An Instance of Abundant Staminate Bloom, 97.
EDITORIAL.—Blossoms of the English Walnut, 97. The Week; The Belgian Hare; Miscellaneous, 98.
QUERIES AND REPLIES.—The Rye Grasses; Coconut Growing; Winter Treatment for Leaf Aphis; Bean Crop in an Orchard; Lawns in Interior Valley Towns; Carbon Bisulphide for San Jose Scale; Planting the English Walnut; Red Polls as Milk Stock, 99.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending February 12, 1900, 99.
ENTOMOLOGICAL.—Some of Our Common Orchard Pests; The Peach Root Borer, 100.
FLORIST AND GARDENER.—Chile Pepper Culture, 100.
FORESTRY.—Planting Eucalypts in Arizona; The Red Gum in the Interior Valley; Trees for School Yards, 101.
THE APIARY.—The San Joaquin Honey Interest, 101.
THE DAIRY.—Raising Calves, 101.
AGRICULTURAL REVIEW.—103.
THE HOME CIRCLE.—Love is All; "How!" 104. Fruit and Medicine; Growth; Women in Persia, 105.
DOMESTIC ECONOMY.—Rosepod Preserves and Marmalades; Hints to Housekeepers, 105.
THE MARKETS.—Produce Market; Fruit Markets, 106-107.
PATRONS OF HUSBANDRY.—From the Worthy Master; Tulare Grange, 110.
MISCELLANEOUS.—Stanford Lectures for Fruit Growers; What Is the Matter with Petite Syrah? The Poultry Growers' Exchange, 102. List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents; Industrial Notes, 108. Gunning for Hail, 111.

The Week.

The increasing heat betokens the advance of the season and work has been rushed in all directions. Field growth is pushing forward and lands in even the latest localities have come into cultural condition. Orchard work is being vigorously pursued and the condition is now generally favorable for good returns, though the frost factor has still to be reckoned with in many regions. Trade in all lines of farm implements and supplies is brisk and merchants carry more smiles than we have seen for some time.

The shipping activity is one of the most stirring topics of the day. What with Uncle Sam's transport service to the Philippines and John Bull's orders for the Transvaal, it is hard to find dockage for the peaceful wheat ships. It looks as though California would have to look out for her home supply of great staples, with the hungry armies to feed in distant parts. The gathering up of 500 mules in the San Joaquin valley, ostensibly for sugar planting in Fiji, but more likely for service in South Africa, is only one item in the general draft upon the desirable things which we have in not too large quantities.

Wheat is rising a little and has a firmer tone on spot with a stiffer and better demand for futures. Five ships of wheat and one of barley have gone out this week and there is another ship with a barley option. The result is that barley shows more movement and is firm, though values are unchanged. Oats are also steady and unchanged. These grain values are counted significant in view of the approach of the assessor, whose shadow usually makes buyers shy at this time of the year and drops prices. Hay is no better, if possible, perhaps a little worse for all but the choicest. Bran is also lower, but ground barley and corn are steadily held. Hogs are firm and higher with small and medium weights still in chief request. Poultry is selling readily with young stock still holding the advantage. Butter is declining and cheese is also shading off. Eggs have dropped again and many Eastern are selling for cooking purposes at a very low rate. Choice apples are scarce and high. Strictly choice oranges are selling better but lower grades are cheap and slow. Strawberries are inferior, so far. Red beans are scarce and higher; potatoes steady and onions higher and stocks light. Some Australian onions have arrived. There is nothing new in wool yet. Hides are dull and weak.

The issue which arose at the south between the orange shippers and the railways, as to the routing of shipments, has been quieted for the present by a conference held in Los Angeles on Monday of this

week. The statement is made that the parties in the conference found it impossible to agree on the initial right to route the freight; the railroads agree that they will promote the shippers' interests in the way of facilitating necessary diversion en route and securing suitable terminal deliveries at destination, providing those facilities are not used, directly or indirectly, to cut the through rates. They also agree to abandonment of the increased minimum weight of a car and to return to the twelve-ton requirement, if the change is injurious to the fruit or to the trade. They agree to look into the refrigerator charge and reduce it, if found excessive, and they also agree that the shippers of fruit shall not be interested in the cars which carry the fruit after the expiration of the present car contracts, which expire Nov. 2, 1902. On the whole, the shippers appear to have secured a fine lot of promises from the railway companies, and all that can be done in the immediate future is to hold them up to the promises. With strong growers' organizations, ready and capable of doing business, we do not apprehend any trouble in this line. The Los Angeles people seem to believe that conference has practically placed the fruit men, as a class, on an equal footing, and this means that the rebate and money concessions system will pass out of existence.

The prune propaganda seems to be progressing very favorably. Meetings are being held in all centers of production. We are not surprised to hear that 98% of the acreage in the Healdsburg district is under contract. The northern Sonoma growers have been warmly discussing co-operation for some years, and have come together on several propositions already, so they were prepared for a wider application of the principle. It will be well for other localities, which have done little together, to have faith in the decision of those who have tried the method and are strong in its favor. In Santa Clara it seems assured that the several groups of growers who have made some progress in organization may find a ground of entry into the greater union, and thus give effectiveness to the general proposition. So far as we have heard, all looks favorable, and there is yet much time for the canvass.

M. H. DeYoung of San Francisco has been appointed by the President a member of the U. S. Commission to the Paris Exposition. Mr. DeYoung has had much experience in such lines and is tireless in promotion of the industrial interests of the State. We can count much on him in rendering the California exhibits effective.

The proposition for a national enactment against the introduction and spread of injurious insects is progressing. At Washington last week the representatives of the Eastern nurserymen assembled, and after conferences between them and the Agricultural Department and the House Committee on Agriculture, the latter body reported a bill providing a system of Government inspection of nursery stock coming from abroad, and also that of American growth when intended for interstate shipment.

SECRETARY PETER J. SHIELDS of the State Board of Agriculture has signaled his first year in office by the preparation of a report upon the agriculture of the State which is very creditable to his knowledge of the subject and his zeal in collecting accurate data. While we have no systematic and properly supplied bureau of statistics in this State it is very satisfactory to find officials like Mr. Shields who are willing to superadd such exacting undertaking to the executive functions which he has to perform. This is particularly timely, too, for it supplies data which should be thrown in the eyes of the world at the Paris Exposition in connection with the fine display which our State will make. Mr. Shields is evidently the right man in the right place.

THE re-election of Mr. A. B. Spreckels to the presidency of the State Agricultural Society gives general satisfaction. In nominating Mr. Spreckels for re-election Director Frederick Cox paid a high tribute to that gentleman's services, saying that the unprecedented success of the last exposition was in a large part due to his energetic efforts. With him as president there could be no doubt that the success of 1899 would surely be repeated in 1900.

The Belgian Hare.

The Belgian hare fancy is looming up with features which the uninitiated will be unable to understand. Our correspondence shows that the interest, though rising first and fastest in Los Angeles, has now pervaded the whole State and bids fair to proceed to limits which are still clear out of sight. It promises to be one of the most sensational events in agricultural lines which has transpired in late years.

A Belgian hare fair closed in Los Angeles on Saturday night, after three days' display of what is claimed the largest aggregation of fancy hares ever assembled in the United States, and probably in the world. They propose to have such a fair each year in Los Angeles and the breeders will take to the road to popularize their industry in other regions. They promise a week's show in San Francisco in May next, and an autumn circuit in the Eastern States. What people think of the Belgian hare is measured by what they are willing to pay for it. The following report of leading sales at the fair is made:

Fashoda Second was sold at \$500 to J. W. Badger of San Jose, while the buck Dexter sold for \$300. The owner of Red Riding Hood, champion doe, refused an offer of \$750 for her, while the owner of a champion buck, Fashoda First, would consider no proposition for the transfer of the animal to other hands. The value of the champions rose at once on the announcement of the scores, but in most cases the owners of prize-winners would not consider any offer. The Duke of Edinboro scored but three-quarters of a point less than did Champion Fashoda, and the owners of Scotch Lord immediately raised his valuation from \$500 to \$1000.

Sleepy readers may conclude from these statements that the Belgian is descended from the March hare, or that the buyers have some relationship to that proverbial animal, but it has to be acknowledged that the figures are warranted by what can be done with these sires for breeding purposes. When it is considered that bucks with these high scores yield revenues to their owners of \$200 and \$300 a month, it is not surprising that they are held at fabulous figures. They will pay for themselves many times over each year, so long as anything like the present interest is maintained.

What there is to be said about the continuation of the interest can be read in the essay of Mr. C. C. Chapman in the PACIFIC RURAL PRESS of January 20. Those in the interest believe that it is going to be a wide custom for even city and town families to grow a good part of their own meat supply. They take less space and are more cleanly than fowls, and are freer from ills and diseases if they are properly housed. We are aware that in southern California the growing of home meat supplies by the Belgian route is being freely undertaken, and satisfactory results are being secured. If this feature alone becomes popular it is easy to see that, even with the almost incredible fecundity of the animal, it will be a long time before the demand for breeding animals will be met, and on this basis the high prices now paid for breeding stock may prove very profitable investments. It may prove, however, that with this, as with some other special lines of productive activity, the degree of success will depend upon getting in early.

A CALIFORNIAN has thrown a gold brick at the American Bee Journal which that journal parries quite skillfully. He suggests that, "in view of the fever-destroying properties of the eucalypti, fringes of choice eucalypti should be planted on the streets in Chicago by the corporation, placed in suitable guards so that six or more plants be placed in charge of every adjacent residence, and an annual reward be given for the best kept plot of plants—on an Arbor day set apart for the special purpose of encouraging the growth and ornamental appearance of said plants. If such a course were adopted, you might ere long transform the now unbearable, stinky summer heat, and perishing winter colds, into most agreeable and healthful temperatures during those seasons in and around your city." This is delightful to contemplate. The Journal thinks it would be a hopeless task to interest the city fathers in such a benign scheme. We do not know which to admire most—the sublime ignorance of the Californian or the ineffable self-control of the Journal. The Californian says for twenty years he was officially connected with forestry in Australia, and therefore ought to know something of what he suggests. We must conclude, however, that he knows nothing of Chicago.

QUERIES AND REPLIES.

The Rye Grasses.

TO THE EDITOR:—We are about to try rye grass and would like suggestions concerning the experiment.—READER, Los Banos.

TO THE EDITOR:—I see much about Bromus inermis for dry land but nothing about its adaption to wet lands. Will it grow on our wild grass meadows which are irrigated and water stands on the land most of the time before haying? Will it stand water as well as Red Top and grow as well? Will it catch on our wild meadows like any other grass seed? Will it grow in water as well as our "round grass," or our "wild millet?"—FARMER, Bieber, Lassen county.

These questions are interesting and suggestive. In answer to the first we are not informed whether the rye grass is to be tried on dry land or on the irrigated land, which is abundant around Los Banos. Whichever it may be, we would suggest that you try both the so-called Australian rye grass (which is supposed to be English rye grass after acclimation in Australia) and the Italian rye grass. The Australian rye grass is the one which has been chiefly grown in California and is very satisfactory. Perhaps there is nothing better both for resistance of drouth and for growth by flooding. The growth will be, of course, directly proportional to the amount of water available and the grass will endure almost any amount of it. Recently the Italian rye grass is also doing exceedingly well, and is preferred at some points in southern California, and is making a splendid turf in connection with white clover on one of the reclaimed islands near Stockton. You can hardly miss success with these grasses, for they catch very easily from the seed and are very hardy.

With reference to the group of inquiries from Lassen county, they are interesting as presenting conditions which few would recognize as Californian, and yet so diverse are our conditions that even these are included. In reply it must be acknowledged that we do not know what Bromus inermis will do under water. It is chiefly advocated for moderately dry lands and is very hardy, and it is a fact that grasses hardy enough to resist drouth are also resistant of excessive moisture. Therefore it would be interesting to try this bromus on a small scale on both dry and wet places. We would, however, make the trial of the rye grasses already named the leading effort. They are known to succeed admirably on moist lands and give immense growth under sewage irrigation, added to the large figures of European rainfall.

Cocoonut Growing.

TO THE EDITOR:—How are cocoonuts planted, and in what soil do they grow? I would like full instructions on planting.—O. L., Yorba, Orange county.

Cocoonuts are planted by bedding the nut in a warm, moist soil so that the eyes are about an inch below the surface and covering the bed with light litter, so as to keep the soil warm and moist. Many nuts are placed close together in a nursery bed of this kind and the plants transplanted after a few months in the seed bed. The soil for the cocoonut is a mixture of sand and leaf mold, such as is formed on tropical shores by the combination of sand and decaying seaweeds. After planting out the young palm has to be kept well watered and sheltered from burning sun heat until it becomes well rooted and able to stand the ruling climatic conditions. We trust our correspondent does not intend to grow cocoonuts in California. It would hardly be worth while except in a frostless situation, and even there the dry air of California would discourage its growth. One can, however, sprout cocoonuts and grow them for a while as ornamental plants by proper shelter and moisture.

Winter Treatment for Leaf Aphis.

TO THE EDITOR:—Last summer I sent you what you pronounced a specimen of the plum aphis or leaf louse, which you said should be sprayed, but told me it was then (June 27) too late. Twigs look black and rough now. Should I spray? If so, when?—F. B. K., Berryessa.

If the eggs of the leaf aphis are present they can usually be found with the naked eye and recognized as shiny black, oval bodies scattered over the bark. Lime, salt and sulphur will kill them and it can probably still be used on prune trees because their buds are late in swelling. If, however, the buds are

beginning to open kerosene emulsion is the proper treatment. If this is done now most of the eggs may be killed and another spray with kerosene emulsion as soon as the survivors appear on the new growth ought to give you clean leaves and clean fruit this year.

Bean Crop in an Orchard.

TO THE EDITOR:—Do the best authorities consider a bean crop injurious to a young orchard, if not planted too near the trees?—A SUBSCRIBER, Swanton.

A bean crop is one of the best possible crops to grow in an orchard because its influence is toward the enrichment of the soil. It is merely a question of whether the trees can stand the loss of moisture, because the beans can only be grown in the summer and moisture will be lost by their use of it and by the evaporation which will be caused by the imperfect summer cultivation.

Lawns in Interior Valley Towns.

TO THE EDITOR:—Will you please inform me what you would consider the best grass or grasses to sow for a lawn on our soil here in the town of Corning? My land is a little bit gravelly, with a sandy loam underneath.—CITIZEN, Corning.

If you are ready to give your lawn all the water and all the care it needs in this country, there is nothing better than Kentucky blue grass and white clover. If you wish to get a lawn very quickly, and one that will maintain a respectable appearance with a little less care and water, Australian rye grass and white clover sown together will probably give the best results. The rye grass lawn never has the beauty of the blue grass, and yet rye grass is very widely used in this State, because it will be fair looking with less water and labor. With such a light soil and open sub-soil as you have, it will require constant application of water to produce good results.

Carbon Bisulphide for San Jose Scale.

TO THE EDITOR:—Are you positive the bisulphide of carbon receipt given in your book, "California Fruits," for disinfecting nursery stock will kill San Jose scale? I tried it for one and a half hours and the scale seems to have as much life as before.—NURSERYMAN.

There seems ample evidence that good bisulphide will kill the scale. There will not be immediate change in the appearance of the pulpy insect beneath the scale however. The only cloud we know of as to the bisulphide is that there is proving to be much difference in the killing quality of different cans from the same factory, as shown by the results in using it for peach root borer at San Jose. Just how this happens no one now knows. The Agricultural Department of the University would like to have a sample for examination of any bisulphide which seems defective in this respect.

Planting the English Walnut.

TO THE EDITOR:—Can the English walnut be transplanted or should the nut be planted where you want the tree? Have you instructions how to raise and care for the tree?—READER, Modoc county.

The walnut can be safely transplanted even after several years. Some growers used to advocate as many as five years' growth in the nursery to escape the cost of field culture, but more recent practise favors transplanting two-year-olds. We do not advise planting the nuts in permanent place nor do we approve the tap-root proposition which some attach so much importance to, still those who hold to that doctrine can assume the extra cost and trouble of going by that route if they desire. As for planting in Modoc county we should begin in a very small way and use the hardy French varieties and not the California seedlings, which would be almost sure to fail.

Red Polls as Milk Stock.

TO THE EDITOR:—Are red polled cattle good milk stock?—M. G. SALMINA, Cambria.

Yes; they have good standing as a dairy breed, and have made milk records, according to Alvord, from 5000 to 8000 pounds of milk per year, with one recorded case reaching to 14,189 pounds. Their chief popularity rests probably upon their merits for general farm purposes, as they have the plumpness of the beef form which is not characteristic of the distinctive dairy breeds.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 12, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

Generally clear, pleasant weather has prevailed during the week, with temperatures above the normal. Light sprinkles of rain in portions of the Sacramento valley and in southern California were of no particular benefit to crops and did no harm. Dry northerly winds were beneficial in the northern part of the State in absorbing the surplus moisture sufficiently to permit farmers to resume plowing and seeding, but in southern California the continued dry weather, accompanied by high winds in some sections, is causing considerable apprehension among farmers, as the grain is turning yellow, and serious results are feared if rain does not fall within the month. Frosts occurred during the week, but were generally too light to injure early fruit.

Grain is still in good condition in most sections, with good prospects of a large crop, but rain will be needed soon in the San Joaquin valley. Nearly all reports show that an unusually large acreage of grain has been planted, and that with the customary spring rains the yield will exceed that of last season. Pasturage continues good, except in the south, where feed is becoming scarce.

Almonds and early deciduous fruits are advancing rapidly, with indications of an unusually large yield, if not injured by frosts. Citrus fruit trees are in excellent condition.

SACRAMENTO VALLEY.

Clear days and cold nights, with light frost, prevailed during the week. The soil is in much better condition and farm work will soon be resumed in all sections. At present little is being done except by orchardists, who are engaged in pruning and setting out trees. Almonds and early deciduous fruits in bloom have not yet been injured by frosts. Orange and olive trees are showing vigorous growth. Grain and pasturage continue in excellent condition, and prospects are still good for large crops and abundance of feed for stock.

COAST AND BAY SECTIONS.

Dry north winds and warmer weather prevailed during the week in most sections, while in others the foggy weather was followed by lower temperature and frosts. In the vicinity of Paso Robles a severe frost on the 8th injured almonds to some extent, but no other damage has been reported. The soil is now in fair condition and farm work is progressing, although it is reported that rain is again needed in the southern coast counties. A large acreage of grain has been planted and good crops are probable, if the usual spring rains do not fail. Fruit buds are advancing rapidly in all sections, and there are indications of a large yield of all deciduous fruits. Pruning continues.

SAN JOAQUIN VALLEY.

Cool weather has been beneficial in retarding the development of deciduous fruit trees. Light frosts on the 7th and 8th caused no damage to early fruits. Nearly all portions of the valley, except the extreme north, are now needing rain, and in some sections it is reported that early grain will suffer if rain does not come soon. At present, however, grain is looking well in all sections, and with the customary spring rains large crops may be expected. Pasturage continues good. No damage was done by high winds on the 7th. Almonds are developing rapidly.

SOUTHERN CALIFORNIA.

Continued warm, dry weather is causing some uneasiness among farmers, as grain is commencing to turn yellow; and, unless rain falls during the month, it is feared serious loss will result. In some sections farmers are preparing for another dry year. Occasional dry northerly winds have also been injurious to vegetation, but did not damage fruit trees. Almond trees are in full bloom, with prospects of a large yield.

LOS ANGELES SUMMARY.—Warm, dry weather, with high winds, intensified effect of drouth, but was lessened in some cases by fog and traces of rain. Farmers are much discouraged. Irrigation is beginning where possible. Fruit trees are too forward.

EUREKA SUMMARY.—Plowing and seeding on uplands are progressing, but ground remains too wet for garden planting. Quince trees and currant bushes are leafing. Pasturage is green and abundant.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 14, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Year to Same Date.	Average Seasonal Rainfall to Date.	Minimum Temperature for the Week.	Maximum Temperature for the Week.
Eureka.....	.02	34.88	18.63	27.17	40	54
Red Bluff.....	.00	15.09	13.13	16.66	38	71
Sacramento.....	.00	13.71	7.85	12.78	44	88
San Francisco.....	.00	14.57	7.77	15.01	45	86
Fresno.....	.00	6.14	3.86	5.63	38	66
Independence.....	.00	2.08	1.15	4.37	28	66
San Luis Obispo.....	.00	12.41	7.15	12.71	34	72
Los Angeles.....	.00	4.57	2.96	10.90	40	74
San Diego.....	.00	2.64	3.73	6.16	46	70
Yuma.....	.00	0.75	1.34	2.31	34	76

ENTOMOLOGICAL.

Some of Our Common Orchard Pests.

By ED M. EHRHORN, Horticultural Commissioner, at the Farmers' Institute at San Jose.

From time immemorial insects have been the bane of man. We read in the holy writings that at the time of Moses Egypt was visited by a plague of grasshoppers. In every country where man has settled he has been subjected to some loss or other by insect pest. In Africa the tsetse fly does great damage to cattle. The beautiful forests of Europe suffer by the attack of several species of caterpillars. In the Western States of our country whole crops are often destroyed by the ravages of grasshoppers. Even in frozen Alaska the poor miner is tormented by mosquitoes, which he says beat the Jersey "skeeter" all to pieces. Thus we see that no matter where we go, nor what business we engage in, whether raising cattle, poultry, fruit or other produce, sooner or later some pest is bound to confront us. Here in our beautiful valley pests have come and gone, others have come, and still others no doubt will come.

PESTS WHICH HAVE GONE.—Many of us will remember that during the years 1881-86 this State was visited by two very destructive scale insects. I refer to the cottony cushion scale and the so-called San Jose scale. Many of us remember the cutting down of our beautiful shade trees all over the valley owing to the attack of the first-named scale. It has gone, probably never to trouble us again. A small ladybug, its natural enemy, has so completely kept it in check that it is hard work to find enough for food for those kept in the breeding cages. The so-called San Jose scale has also gone. When I say gone, I mean as a pest. We still find a few trees here and there infested, principally on trees along a dusty road. Why is it that this scale survives on the dusty tree? What is it that has so completely eradicated this scale? None of us can tell. We admit that ladybugs and parasites have done a great deal toward it, but there has been some other agent at work.

PRESENT PESTS.—Now, let us see what pests we have with us to-day. Among the scale insects we have black scale or olive scale. It is one of the toughest and hardest scales to fight, and very few enemies seem to care to attack it. We must, therefore, fight it with good tree washes.

We have its next door cousins, the brown apricot scale and the frosted scale; but these have a wonderful enemy, a chalcid fly (*Comys fusca*), which keeps them in complete check. I have found from 80% to 100% of the scales attacked by it and I should not spray for these two species as long as the chalcid fly is present. Another scale which is more abundant now is the Italian pear scale (*Diaspis pyricola*). This scale would probably be kept in check by our twice-stabbed ladybug if it were not that the scale has the habit of crawling under loose bark and moss, thus preventing the enemy from following it. It is, therefore, necessary to remove all loose bark and moss before you can expect the ladybug to do good work. Moss can be removed by spraying with one pound of caustic soda to six gallons of water. I have a scale here, the white peach scale (*Diaspis amygdali*), which comes from Japan, the home of the so-called San Jose scale. It is a terrible peach pest, and also attacks cherries and other fruit trees. It does not exist in the State yet, as it has been prevented from entering by the vigilance of Alex. Craw, our State quarantine officer. Nearly every steamer arriving from the Orient brings plants which are infested by this scale, but they are all destroyed before they land.

THE PEACH TREE BORER.—The next insect, and one of our worst enemies, is the peach tree borer (*Sannioidea opalescens*). Very few growers have ever seen the adult insect, the moth. I have a specimen here, also some pictures of it, which will enable you to observe it in the future. I have also a bulletin entitled "The Peach Tree Borer" which Mr. Slingerland of Cornell Experiment Station kindly sent me. It treats about the Eastern species, which is closely allied to our own. Cornell Experiment Station is to be congratulated on the good work it is doing in working up the various pests of the farmer. Most of their experiments coincide with ours except the carbon bisulphide remedy. We have had similar failures here, working on the same plan as they did, but we invariably find that when the soil is loosened around the tree, so that the fumes can quickly penetrate and reach the borers, good results have been obtained, providing good carbon bisulphide has been procured. In one instance reported by Mr. Slingerland the fumes were kept only one hour; in another instance five hours, around the tree. This is too short a time, for we have never found many killed under twenty-four hours—and better forty-eight hours—exposure. Another experiment they made with the McGowen injector, and the fumes were allowed to remain twenty-four hours without good results. We have not tried this last method here, and so cannot tell what the outcome would be. The best result they had was with a gas tar wash, put on the tree as a paint, without any injury to the trees. About four-fifths of the borers were kept out of the

trees by this method. In this State we have always been warned against the use of gas tar in any form on the bark of trees, so that no experiments to speak of have been tried with it as yet. Our results with paper wrapping as a barrier have been better than theirs, but it is too expensive.

CODLIN MOTH.—Another insect which we all dread is the codlin moth (*Carpocapsa pomonella*). About 1% of the growers have ever seen the adult, and I have some here to show you. The moth flies from about sundown till dusk, and is not attracted by light. We are supposed to have two broods in this State. This pest can only be kept in check by poisonous sprays, among which good Paris green is the best.

PEACH TWIG BORER.—The peach twig borer or peach moth (*Anarsia lineatella*) is a pest which used to cause lots of damage to young peach trees, but since the discovery of the winter brood it is kept in check with a good kerosene emulsion.

CATERPILLARS.—Considerable damage is sometimes done by caterpillars, such as canker worms, tent caterpillars and cut worms. Most of you have seen the caterpillars, but very few have seen the eggs which produce them. I have those of the canker worm moth and also those of the tent caterpillar moth. The reason I show these is that in destroying such clusters when pruning a great deal of damage can be avoided. The moth, being wingless, is readily captured. I am often asked, What are cut worms and where do they come from? I have here a cut worm and also the adult moth. They are called owlet moths and are very abundant now. You will see them flying about any bright light, especially around electric lights. I have also a sample of our vinehopper (*Tettigonia circellata*). During our dry years this pest was not as numerous as it had been a few years ago. It is a very hard pest to fight. The most serious pest of the vineyard is the phylloxera. As this insect is too small to be seen with the naked eye, I can only show you some of the work done by it. These roots show the little galls which are produced by the insect. The only remedy is to plant resistant vines. This finishes the common pests.

STUDIES OF INSECTS.—There are a few insects which trouble the grain at times. There are also some which trouble the vegetable man, the principal one being the imported cabbage butterfly. There are a great many household pests, which at times become very annoying, but which can easily be gotten rid of at the proper time. In conclusion I will say that the best thing the grower can do is to study the habits and different forms of his pest. If he find some creature he does not know, send it to some one who does. If he is in doubt whether the insect he finds is injurious or beneficial, he should certainly not kill it until he does find out more about it. By all means let us encourage nature study in our schools, for by doing so the young eyes are trained to observe, and objects once impressed upon the mind through the eye are more lasting. We hear the words and names and sooner or later forget them, but structure, form and peculiarities of objects are hardly ever forgotten.

An interesting discussion followed the address, after which some questions of a general nature were asked, and the institute took much interest in the specimens exhibited by Mr. Ehrhorn.

The Peach Root Borer.

TO THE EDITOR:—It is necessary that every orchardist should be familiar with the various means to destroy the numerous pests we have to contend with in the orchard. We are all apt to follow in the old groove, instead of trying to find new remedies.

A few years ago the canker worm was giving us considerable trouble, and it was customary to shake the worm from the tree and then apply some sticky substance to the trunk to prevent the worm ascending again. This system was followed several years and still the worm increased; then paper bands were used, painted with printers' ink, during the winter, to prevent the female ascending the tree to deposit her eggs; then wire screens were used by some observant orchardist, and are now used all over this valley with perfect success.

So it is with the borer. For years we have been digging them out, but despite our efforts they are gradually increasing. What we need is a preventive.

A FEW FACTS CONCERNING THE PEACH BORER.—The female deposits her eggs in May, June and July—some years earlier or later, according to the season. The eggs are chocolate colored, oval shape, and can be seen with the naked eye. They are deposited at the base of the tree or a few inches above, often in a crevice of the bark. In about a month from this time the larva leaves the egg. They grow rapidly. I have seen then in July $\frac{1}{4}$ inch long, and by September almost full grown. As the grubs grow they burrow toward the roots. In the spring they ascend again and go into the chrysalis state, and by May or June the fly appears.

TREATMENT.—The first thing to do is to prevent the flies depositing their eggs on the tree. To do this I find nothing better than paper. I generally

use newspapers, and find they answer the purpose and are not expensive. One paper is sufficient for one large tree or two small ones. The paper should be put on in April, when the heavy rains are over.

Remove the soil from the base of the tree 6 inches deep. Roll the paper around the tree, not wrapping too tightly, especially on young trees. Tie with twine and fill up the hole. This will also protect your trees from sunburn and flathead borer. If they are put on carefully they will last for two seasons, or they may be taken off in October and replaced in the spring.

Another method we have used with considerable success is boiling hot whitewash, applied in July and August, to destroy the eggs. In order to whitewash the tree close to the ground it will be necessary to dig away some of the soil. It is useless to put on any preparation, if you leave an inch or so exposed at the base of the tree.

CHAS. E. BURNS.
Campbell, Cal.

FLORIST AND GARDENER.

Chile Pepper Culture.

Mr. J. B. Neff of Anaheim turns gracefully from discourses on apricots and walnuts to warmer sentiments in a discussion of chile pepper culture, which he undertakes in the California Cultivator on the basis of his own experience as a successful producer of hot stuff.

HOW PLANTS ARE GROWN.—A hotbed is made by excavating about 16 inches deep; fill in to within 4 inches of the top with damp stable manure, tramping down very solidly. Spread about 4 inches of sandy loam over the manure. The seed is sown quite thickly over the loam and then about $\frac{1}{2}$ inch of loose, sandy soil placed evenly over it and all kept damp. When the plants have two or three leaves thin to $1\frac{1}{2}$ inches apart each way. The plants must be watered while in the hotbed by sprinkling. Great care should be taken to protect from frost.

SOIL AND PREPARATION.—Rich, sandy soil is the best for the chile pepper. It should be plowed deeply and be put in a state of thorough cultivation. Ridges should be made 3 feet apart and the plants set $2\frac{1}{2}$ feet apart on the ridges. All plants must be on a water line, and to get this the ridges should be made, water run down the furrows and the plants placed about 2 inches above the water mark. This insures every plant receiving water when irrigated. Plant as soon as danger from frost is past.

CULTIVATION.—Frequent cultivation is necessary until the plants get too large to allow of a cultivator and horse passing between the rows. All weeds must be pulled out. When the plants are set as before noted all the ridge will be on one side. This must be worked down with a cultivator and then a plow used to throw earth on either side of the furrow, so that the plants will be midway on the ridge.

IRRIGATION.—While the plants are small water will be needed about once in twenty days, but as they get larger it will be needed as often as once a week, though only in small quantities. The plants seem to have no deep roots, consequently the surface soil must be kept damp.

PICKING.—The field should be gone over about once a week after the peppers begin to ripen, all that are fully ripe being taken off. Great care must be exercised to pick all the stem with the pepper. They should be allowed to lie in the sun one day after being picked in order to toughen the stems and prevent them breaking during the process of curing.

STRINGING.—The common method is to cut strings of strong, smooth twine $8\frac{1}{2}$ feet long. Draw this through a needle about 10 inches long, which is often made of a bicycle spoke. Peppers having any breaks or blemishes must be thrown away, as they would decay before drying properly. Of course, where an evaporator is used these can be saved. After the strings are full and tied they are hung on nails driven into a rough pole or other framework standing about 6 feet from the ground, and left until dry; or if shelter is available they may be moved before becoming fully dry and hung closely together under such shelter, but where there is a free circulation of air.

EVAPORATING.—Many growers prefer evaporating instead of drying. The evaporators used are of various designs and sizes, but they should be large enough when the peppers are dried on strings to hold not less than 500 strings. The usual plan is to have a furnace with several turns of 8 to 10-inch pipe in the basement, the peppers being placed in the second story over a very open floor and with good ventilation. The temperature must be kept at 110° Fahr., and in this way the house can be refilled about every four days.

YIELD AND PRICE.—Both of these, of course, vary with the season, soil and water supply. Two hundred and fifty strings of five pounds each is called a paying crop, but with all conditions favorable, including a late, warm season, as high as 400 strings, or even 2400 pounds per acre, of dried peppers may be grown. Prices range from 35 to 75 cents per string if sun dried and $7\frac{1}{2}$ to $12\frac{1}{2}$ cents per pound if evaporated.

FORESTRY.

Planting Eucalypts in Arizona.

The Arizona Experiment Station has been studying eucalypts, with a view to ascertaining which ones can be successfully grown in southern Arizona.

The eucalypts are evergreens belonging to the genus *eucalyptus*, of which there are about 150 species. They are indigenous to Australia and the adjacent islands, and have been introduced into many parts of the world having a similar climate. The different species require different conditions of soil and climate. About fifty species thrive in different parts of the southwestern United States. Few of the species have common names that distinguish them from each other; hence, in speaking of them, it is necessary to use the scientific names, in order to be accurate. The one most commonly grown in California, where the eucalypts have found special favor, is *Eucalyptus globulus*, commonly called blue gum there.

A much smaller percentage of the eucalypts thrive in Arizona than in California. In fact, it has been commonly supposed that none would thrive, probably from the fact that *E. globulus*, the prevalent one in California, endured neither the heat of summer nor the frosts of winter in Arizona.

THE HARDY EUCALYPTS.—It has been found that species resistant to both heat and moderate cold do not thrive in Arizona, a few of which will probably grow nearly, if not quite, as rapidly as the blue gum does in California. A few plants of various species have been set in various parts of southern Arizona from time to time during the past eight years. Those that have done the best are *E. viminalis*, *E. rostrata*, *E. leucoxylon*, *E. hemiphloia* and *E. gomphocephala*, the first two having made the most rapid growth. Six-year-old *viminalis* trees near Phoenix range from 8 to 14 inches in diameter and 40 to 50 feet high. One six-year-old *rostrata* tree is 18 inches in diameter and about 45 feet high.

VALUE OF THE EUCALYPTS.—The eucalypts, being of much economic value, it is desirable that such species as will thrive here be introduced as rapidly as practicable. Besides being useful shade trees, and, consequently, adding much to the appearance of the landscape, especially during winter, when there are few other evergreens in southern Arizona, they are valuable for fence posts, for fuel, and for a great variety of purposes for which hard wood is needed. The hardy species mentioned can be grown in any part of Arizona where the temperature never falls below 15° to 18° F.

HOW TO START.—Young eucalypts may be obtained of nurserymen or grown from seed. Unless one has proper facilities for the propagation of seedlings and has had some experience in growing delicate plants, it will be cheaper to purchase the plants of a grower.

Probably the best time to sow the seed in Arizona is November. Sow in boxes 3 or 4 inches deep and 18 to 20 inches square, using for a seed bed a mixture of vegetable mold and sharp sand. Scatter the seed evenly over the surface and cover about $\frac{1}{4}$ -inch with finely sifted soil. The seed should be watered lightly daily, care being taken that the surface never becomes dry. The young plants should appear in from one to two weeks. After this, be careful to avoid keeping the seed bed too damp, or fungi may attack and destroy the young plants. A good plan is to water only during the warm part of the day, that the soil may become partially dried promptly. If possible, rain water or distilled water should be used for watering the young seedlings, as the salt and alkali of the waters of Arizona are apt to cause corrosion at the surface of the soil.

When about 3 inches high the young plants should be transplanted into fresh soil—a mixture of clay loam, well rotted manure and sand. They may be set about 2 inches apart each way. Eucalypts make a better growth when planted out 6 to 12 inches high than if left in the seed boxes until larger. During most seasons April will probably be the best month for setting them in the field. None should be set after the early part of May.

PLANTING FOR FUEL.—For fuel or timber they may be set 6 to 10 feet apart each way. They grow straighter and make better timber if planted near together in blocks than if scattered over a farm. If cut to the ground when a sufficient size for fuel or posts, they will send up sprouts that may be cut again in a few years.

The Red Gum in the Interior Valley.

D. A. Learned of Stockton writes to the Mail that he can grow $\frac{1}{2}$ -pound bunches of Sultana grapes on a vine in the outer row of the vineyard, which produced a little above the average of vines of the same sort, say, thirty pounds of fruit. What is remarkable about this is that, 12 feet distant from this vine, northeast-ly, there is a red gum (*Eucalyptus rubra*) tree 2 feet in diameter. Mr. Learned says: I have ob-

served for more than twenty years that the eucalyptus family of trees, after they get their roots deep into the earth, do not interfere with the growth of other vegetation except by their shade. The oak and the eucalyptus families of trees are the only ones capable of penetrating hardpan and drinking the water beneath, and are able to survive and thrive in the wettest and the driest seasons.

To shade the public roads on our hardpan lands, I favor the red gum for the following reasons: It never blows down, unless the tap root has become twisted and tangled by remaining too long in the pots. The branches are tough and rarely break off. It naturally throws out permanent branches 20 feet above the ground, and these branches present an instructive example to mankind of living and letting live. One branch does not hog all the sap and starve the others to death, but each takes its proper share, so that all take their proper places in a beautiful conical-shaped top. It does not obstruct the view or breeze for people riding in carriages as do nearly every other shade tree. It is easily raised and needs no care, except to water it once in summer and to protect it from the horns of stock for five years. It does not harbor insects, needs no washes, no whitewash or paint. It produces nothing to tempt theft, and affords no excuse whatever for a new officer to draw a salary. The red gum attains in twenty years a diameter from 18 to 24 inches and a height and spread of 40 to 50 feet. In the same time the blue gum grows 24 to 30 inches in diameter and 100 feet in height. Any spread of branches and shade must be secured by topping.

Trees for School Yards.

TO THE EDITOR:—Will you kindly name the best varieties of shade trees to plant in a school yard? The land contains much alkali.—WM. PROVAN, San Jose.

TO THE EDITOR:—In answering Mr. Provan's question, it may be noted that there are many excellent shade and ornamental trees which will grow on the strongest alkali soils anywhere in Santa Clara county; but if the location is on low lands near the bay, containing salt, and having the water level near the surface, the list is limited. We must also consider the requisites of school-yard trees, which are usually called upon to endure some especial hardships. I should suggest:

1. For low and saline lands: European sycamore, silver maple, golden willow, *Tamarix gallica* (large shrub), *Casuarina equisetifolia* (resembles a pine) and *Acacia melanoxylon* (evergreen broad-leaved).
2. For any "white alkali" soils in the Santa Clara valley: Cork bark elm, *Loeust bessonia* (the most handsome of the locusts), mulberries, in variety (Lick's American is a very good one), European sycamore, California black walnut, *Sophora japonica*, *Acacia decurrens* (and *mollissima*), camphor tree, *casuarina*, several species, and Monterey pine.
3. For quite strong "black alkali" soils: European sycamore, locusts, in variety, and date palm.

C. H. SHINN.

University of California, Berkeley.

THE APIARY.

The San Joaquin Honey Interest.

F. E. Brown, secretary of the Central California Bee-keeping Association, gives the Hanford Sentinel an interesting account of the bee keepers' experiences for the year in his section.

PHASES OF THE YEAR.—The season of 1899 was a very successful one for the bee keeper of this county, as it was the best season for the production of honey that we have had in the past ten years. The honey flow commenced early in June and flowed steadily until late in September, and was quite general over the county. However, there were some localities that did not fare quite so well as others. The most favored parts of the county the past season were the eastern and southern, while the western did better than the northern. However, this is not usually the case, as the northwestern portion of the county has a good record for quality, which, as a rule, is darker than that produced in the part south of Hanford.

Along with the good work that the bees have been doing the past season, the Central California Beekeepers' Association has also accomplished a good work, and as a result the man who has a good start in the bee business can look the world square in the face this winter, and is not afraid that he will be called upon to pay a bill that he can not meet.

CO-OPERATIVE MARKETING.—The Beekeepers' Association has this season marketed its own honey and bought its cans and cases by the carload, thus keeping within its ranks a great saving, which has heretofore helped to flush the comforts of the buyers, as we can market our honey a great deal cheaper than the buyer would want for his part. We have demonstrated beyond doubt the fact that we can save \$10 on every ton which we have to market, which means a net gain to the association for the past season of

\$1600. Is it any wonder that there are so many buyers in the field wanting our honey to speculate upon?

We can save at least from 5% to 10% by handling our own cans and cases. Then, by being associated together, we are better prepared to grade our honey, which gives it a better appearance. Heretofore we have bought our cases anywhere and everywhere, no two cases being the same or of the same weight, and there was always difficulty in adjusting the tare.

THE CROP.—Kings county for the season of 1899 produced and handled through the association thirteen ears of extracted honey, or 162 tons, which sold to the producers something over \$19,000 net. The association shipped in and used five carloads of cans and cases, the honey being mostly sold f. o. b. Hanford and Guernsey and shipped to Chicago, Boston, New York, Kansas City, Philadelphia and San Francisco.

The coming season promises to be another good one for the honey man, and there is a good swarming season expected.

THE DAIRY.

Raising Calves.

TO THE EDITOR:—Will you tell me how to feed oil cake meal to calves? How much can I give a calf one month old fed on skim milk? How often a day?—READER, Kernville.

We can best answer the above and the same time give very interesting data on calf growing by referring the work of the New Hampshire Experiment Station where they have been attempting to determine the average cost of raising a dairy cow. For a considerable period records were kept of the food consumed and the cost of the grains made by thirteen heifer calves from the time they were weaned until sixteen months old. The calves were taken from the cows as soon as the latter's milk was fit for creamery use and were fed whole milk. This was gradually replaced by skim milk, until by the end of the second week only separator milk, which was almost free from fat, was fed. To replace the fat, ground flaxseed, cooked to a jelly in water (one pound of flaxseed to four quarts of water), was added to the milk. Seven to ten quarts of skim milk and one or two quarts of the flaxseed mixture were fed daily per head in two feeds. During part of the time middlings was substituted for flaxseed. As soon as possible the animals were encouraged to eat grain and hay. The amount of these feeding stuffs was increased as the animals increased in size and weight, while the skim milk and flaxseed remained nearly constant until they were discontinued, when the calves were six to eight months old and were turned out to pasture. Some of the calves were taught to drink from a pail, but most of them were fed by means of a "calf feeder," which greatly lessened the work of feeding. A careful watch was maintained to note any indigestion. Diarrhoea or scouring was quickly stopped by reducing the amount of food and adding limewater to the milk.

COST OF GAIN.—In discussing the cost of the gains made the different feeding stuffs are rated per hundred pounds, as follows: Milk, \$1; skim milk, 20 cents; flaxseed, \$3.25; middlings, 80 cents; bran, 70 cents; linseed meal, \$1.25; oats, \$1; oatena, 65 cents; mixed grain (middlings, oat feed, and linseed meal 2:2:1), 90 cents; hay, 50 cents, and green barley fodder, 15 cents. It is stated that little difficulty was experienced in keeping up a steady growth in size and gain in weight. Differences were always noticeable between individual animals in the rate of growth and amount of food consumed. Large animals invariably required more food to maintain their condition than small ones.

WEEKLY GAIN.—It was found that eight calves under five weeks old made an average weekly gain of 7.6 pounds, at a cost of 40.6 cents; from five to nine weeks the average weekly gain was 9.1 pounds and the cost 36.7 cents. The same number of calves from nine to thirteen weeks old made an average weekly gain of 11.8 pounds, at an average cost of 43.1 cents. Eight calves from thirteen to twenty weeks old gained per week on an average of 10 pounds, at a cost of 52.9 cents; six calves from four to eight months old made an average weekly gain of 11.1 pounds, at a cost of 63.7 cents; two calves from eight to thirteen months old made an average weekly gain of 5.25 pounds, at a cost of 54.8 cents; four heifers thirteen to sixteen months old made an average weekly gain of 6.12 pounds, at a cost of 65.1 cents per week; four of the heifers were maintained on pasturage from July 24 to October 26, 1897, and the total gain in weight of the four animals was 313 pounds.

IN CONCLUSION.—High-priced foods, viz., whole milk, flaxseed, linseed meal and oats, will cause the cost of the weekly ration to increase out of proportion to the gain, if fed freely. Flaxseed can not be used with economy except in the earliest stages of growth (the first two or three months), and whole milk should be discontinued as soon as possible.

Stanford Lectures for Fruit Growers.

The programme of the lectures, to which we called attention in last week's PACIFIC RURAL PRESS, is as follows:

MONDAY, FEB. 19.

11:15—"The University and the Fruit Grower," President David Starr Jordan.
1:30—"The Growth of Markets," Prof. F. A. Fetter.

2:30—"Insect Life," Prof. J. H. Comstock. After the lecture there will be an exhibition of specimens illustrating the structure and metamorphoses of insects.

TUESDAY, FEB. 20.

10:15—"The Selection of New Forms of Fruit," President David Starr Jordan.

11:15—"Fighting Insect Pests," Mr. E. M. Ehrhorn, Entomologist for Santa Clara county, Mountain View.

1:30—"The County Bank and Its Relation to the Horticulturist," Mr. H. W. Torchiana, Los Banos.

2:30—"The Balance of Nature," Prof. J. H. Comstock. After the lecture there will be an exhibition of predacious insects and parasites.

WEDNESDAY, FEB. 21.

10:15—"The Soils of California," Prof. J. C. Branner.

11:15—"The Relation of Nature Study to Agriculture," Mrs. A. B. Comstock.

1:30—"The Old Farmer and the New," Prof. E. A. Ross.

2:30—"Bees and Fruit Growing," Prof. O. R. Jenkins.

THURSDAY, FEB. 22.

10:15—"The Preparation and Marketing of Cured Fruits," Mr. S. F. Leib, San Jose.

11:15—"The Nicaragua Canal," Mr. Edward Berwick, Monterey.

1:30—"The Laws of Transportation," Prof. E. A. Ross.

2:30—"Scale Insects," Prof. J. H. Comstock. After the lecture there will be an exhibition of microscopic preparations of scale insects.

FRIDAY, FEB. 23.

10:15—"The Next Step in Forestry," Prof. W. R. Dudley.

11:15—"The Principles of Spraying," Prof. C. W. Woodworth, University of California.

1:30—"Co-operation," Prof. F. A. Fetter.

2:30—"Bees and Bee Culture," Prof. O. P. Jenkins. This lecture will be illustrated by specimens of hives, other bee-keepers' supplies and living bees.

What is the Matter with Petite Syrah?

TO THE EDITOR:—There is nothing at all the matter, if your correspondent had the true Petite Syrah, or Sorine, which he evidently has not. It is the same trouble we had years ago with the Franken Reisling, or Sylvaner. There are two varieties grown under the name of Petite Syrah—one of them is a most desirable red wine grape,

always setting and ripening a full crop, even the second crop ripening well, so that it can generally be picked with the first crop; the other, which I presume is the Malbec, from your correspondent's description, never producing a crop worth having. It is an excellent grape in quality, but the quantity is "not there." I have tried it under all forms of pruning, but could never get more than a pint from the most vigorous vines. My advice is, graft it, and get something that will bear.

We were fortunate to obtain our scions from a reliable source, and our vines, since they came into bearing, have furnished some of the best wines in our cellar, and plenty of it.

We had the same trouble with the Franken Reisling years ago. Two varieties were disseminated, which looked much alike, but while the true is a good bearer, the false, a stronger grower, would produce only one-fifth of a crop. I took the trouble to mark all the spurious vines one summer, and grafted them with Semillion the next spring. Since then they have been bearing good crops, until the phylloxera stopped them. So much for correct nomenclature, which we need very much, and a little more honesty in those who send out propagating wood.

Napa.

G. HUSMANN.

The Poultry Growers' Exchange.

TO THE EDITOR:—I should like to say that I find the same difficulty that W. B. Johnson does with regard to getting fresh roosters of pure breed every year, though we sell numbers of fine birds for the table that I should have to pay \$4 or \$5 for from a fancier, only I have the Barred Plymouth Rocks, and I should like to trade with some one who is in the same difficulty as myself.

MAURICE W. SUMMERHAYES.

Rosedale, Kern county.

[The above is in accordance with our invitation to poultry-growing readers to write us of their work. We hope the exchange of non-related stock may be of advantage. We have no idea, however, that the occupation of the fancier will be gone. The practical egg makers usually have neither time nor eye for the very close selection which the true fancier employs and which keeps the breed on the up grade. The more all egg makers get interested in improvement the greater demand there will be for the finest work of the fancier, and the more discussion we can excite on the whole subject the livelier the business will be.—Ed.]

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The Most Powerful Made.

Adapted to Hillside or Level Lands.

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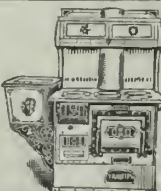
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\$50.00 RANGE FOR \$25.00

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TRIUMPH STEEL RANGE Into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21 1/4 inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.



Kansas Standard TOMATO Best Novelty Out. A Money Maker. One packet, 25c.; three packets 50c. Specialties: Alfalfa, Kaffir Corn, Siberian Millet, Forage Plants for arid regions, Onion Seed and Onion Sets. Large stock of tree seeds. Elegant catalog mailed free on application. Write for one NOW. KANSAS SEED HOUSE, F. Barteldes & Co., Lawrence, Kan.

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KINDS
And
Conditions
Of Soil.

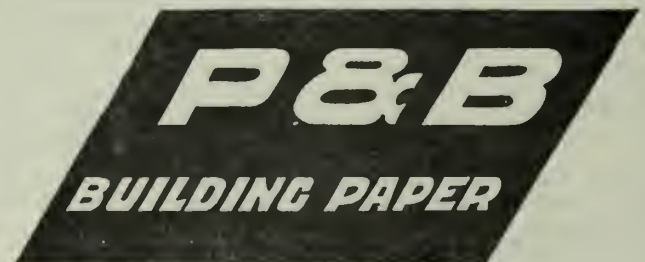
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The walls of a house are built for protection. If the sun and weather open up the sheathing, the rain or the air will get in and cause discomfort and doctor's bills. To prevent this the architect or builder uses building paper. There are many kinds, but only two classes—the poor and the good. P & B PAPER is good—the best. It is very strong, odorless, waterproof and airproof, and will not rot. Ask your dealer for samples, or write us for them. We are the makers.

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Grade up Your Herd..

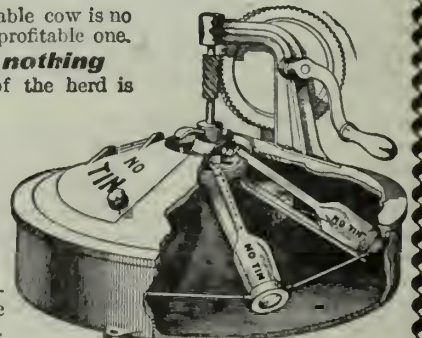
The expense of feeding a profitable cow is no more than the cost of feeding an unprofitable one. It costs comparatively nothing to find out whether each member of the herd is profitable. The

NO-TIN... Babcock Tester

will give exact information. Is substantially built of cast iron, and made to use the ordinary Babcock bottles.

TEST EVERY COW and if she is not profitable, do not keep her. It is the best low priced tester in the world. Send for Catalogue, No. 70.

Elgin Manufacturing Co., Elgin, Ills.



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Agricultural Review.

ALAMEDA.

MAKING BEET CONTRACTS.—Pleasanton Times, Feb. 10: The agent of the Alameda Sugar Works; R. C. Peach, states that he has made contracts for about 2000 acres. There will probably be 3700 acres planted to beets in this section this year against 1700 acres last year.

CREAMERY WILL REOPEN.—Livermore Herald, Feb. 10: At a meeting of the directors of the Livermore Creamery Co. the creamery was leased for one year to Minford Y. Smith of Alameda. Mr. Smith will put a force of men to work immediately getting the plant in shape and hopes to have it in running order before March 1st.

FRESNO.

IMPORTATION OF VINES PROHIBITED.—Fresno Republican, Feb. 8: The supervisors have passed an ordinance which makes it unlawful for any person, firm, corporation or association to import into the county "any grape vine, limb, bud, branch, root, scion or cutting," and likewise makes any person liable who receives such importation.

PLANTING TREES AND VINES.—Fresno Republican, Feb. 8: This year will mark the beginning of an unprecedented advance in the fruit industry of Fresno county. Thousands of acres will be planted in vines and trees. The local nursery firms report that the demand for young trees this year far exceeds the supply. The heaviest planting is being done in peach trees. The planting is going on throughout the county, but particularly around Fresno. The number of trees planted during the season will be from 50,000 to 60,000. Next to peaches Bartlett pears are the favorite. The supply is also short, but there will be from 25,000 to 30,000 of them, according to the estimate of Mr. Reeding. The present season will also be the opening of a new era in vine growing in Fresno county. Hundreds of acres of young vineyards will be set out. The kinds of vines most called for at the nurseries are Muscats, Thompson's seedless, seedless Sultanias, and, of wine grapes, Zinfandels and Feher Szagos; of table varieties, Emperors, Malagas and Teyaks.

GLENN.

WILL RAISE STOCK.—Orland Register, Feb. 2: One of the largest ranchers in this vicinity is planning to get a greater return from his farming operations than is possible at present on account of the low price of wheat. Next season he will put in a large acreage of barley, and, when the grain is matured, instead of harvesting it, will turn cattle and hogs into it to fatten. The cost of harvesting and sacking the grain will be obviated and the fattened cattle and hogs will be ready for market in the fall.

HUMBOLDT.

RANGE FEED IS IMPROVING.—Eureka Standard, Feb. 10: Reports from Blocksburg state that stock is improving, as is also feed. Such is the word for miles around. There is very little snow on the mountains. Farmers have been rushing in grain whenever the ground is dry enough. Reports from Round valley tell of its being one large mud puddle, hardly any grain sowed and over 1000 head of hogs driven out to market during the last good spell of weather. Lambing on some of the ranges is in progress.

KERN.

CROP PROSPECTS.—Bakersfield Echo, Feb. 8: The outlook for a big harvest in the San Joaquin valley was never better than at the present time. All kinds of fruit-bearing trees are in a healthy condition and no injury has been done by frosts or cold weather. Grain growers are enthusiastic and declare that wheat is further advanced than for years before. Reports from the "Weed Patch" and Lakeside districts are to the effect that growing grain is 2 feet high in many localities, and that it will be necessary to pasture it down.

LOS ANGELES.

REPLANTING FOREST RESERVES.—Los Angeles, Feb. 8: From reports made by T. P. Lukens to the Forest and Water Association the first attempt on an extensive scale to replant the burned forest reserves in southern California has been successfully made in the Sierra Madre mountains, in the vicinity of Mount Lowe. This work was done by Lukens, who was assisted by Louis Newcom and John Hartwell of the forest rangers and J. H. Nicoll of the School of Forestry. In his report Lukens said: "The first week we planted at an elevation of from 3000 to 3500 feet about 6000 Pinus tuberculata and 5000 Pinus ponderosa and 1000 black pine seed. Ridges and crowns of hills were selected so that when the trees came into fruiting the seed would be cast in different directions down the steep slopes. The first planting was done with sharpened iron-wood poles, with which we made holes 3 inches deep, in which we placed the seed and covered them well. For the next week's work we used a sharp-pointed 3-inch gas pipe, and we were enabled to plant much faster. We planted in all last week about 53,000 seeds at an elevation of from 4800 to 5000 feet. The seeds used the second week were nearly all ponderosa. I am more confident than ever of the practicability of reforesting the burned areas of our mountains. I would recommend that the Legislature be asked to enact a law permitting counties to levy a tax to reforest the mountains."

MERCED.

CROP REPORTS.—Merced Sun, Feb. 9: J. G. Elliot, the grain buyer, states that farmers expect to harvest a full crop. They argue that the ground is full of moisture and that grain has now attained such a growth as to protect the ground from the hot winds. So a full crop is practically assured. C. Landram said the prospect for a good crop in this county is certainly excellent. Early grain is looking splendid now, and the late sown will, with ordinary spring rains, make a full crop. The sand country is especially promising, and will produce better crops this season than for years past.

MONTEREY.

CONTRACTING FOR SUGAR BEETS.—Monterey, Feb. 4: A representative of the Spreckels Sugar Co. has been in the Carmel valley for several days past contracting with farmers for beets to be used at the Spreckels Sugar Factory next season. It is stated that a number of big contracts have been made and that the output of beets from the Carmel valley next season will be very large.

CAMPAIGN CLOSED.—Watsonville Pajaronian, Feb. 8: Beet slicing was finished at Spreckels on Tuesday. About 175,000 tons of beets were sliced during the campaign—the largest tonnage ever milled in a season in this country.

RIVERSIDE.

ORANGES ARE SMALL.—Riverside Press, Feb. 10: Through the courtesy of Anderson, Wetten & Godfrey, we have been favored with a statement from Sgebel & Day, New York, giving the sizes of a lot of thirty-three cars received by them January 1st to 31st. The showing is a revelation as to the number of small sizes being shipped this year. The statement is as follows: 96s, 83 boxes; 112s, 86 boxes; 126s, 611 boxes; 150s, 1111 boxes; 176s, 1452 boxes; 200s, 1900 boxes; 216s, 1508 boxes; 250s, 1508 boxes; 288s, 938 boxes; 300s, 260 boxes; 304s, 49 boxes; 306s, 87 boxes. This is a total of 9631 boxes, and an average of 210 to the box. About 25% of the fruit came from this district, so it can not be said that the drought was the cause of the small sizes. The unusual season would seem to afford a clue to the universally small oranges of this year. The early summer months were exceptionally cool, and the fruit took on size very slowly. By the 1st of September the fruit was several weeks behind time so far as size was concerned. Then came some hot weather, which ripened the fruit fast, but did not force the growth. Added to these conditions was a winter of almost unprecedented warmth, and we find a logical reason for the oranges being much below the average in size.

SAN JOAQUIN.

FARMERS FAVORED.—Stockton Mail, Feb. 9: The general feeling among farmers seems to be that the present weather is a great blessing to growing crops. The land that was too damp to plow is being dried out rapidly and a great deal of barley will be put in if the weather continues clear. San Joaquin barley is regarded as choice for exporting and many farmers think that if they can get a good crop of barley it will prove as remunerative as wheat.

SANTA CLARA.

EVERYBODY SIGNS.—San Jose Mercury, Feb. 11: A meeting of prune growers was held Friday. All were enthusias-

tic and every one present signed the contract. Fully 90% of the district is now assured.

SISKIYOU.

BEEF CATTLE IN DEMAND.—Dunsmuir News: A train containing nineteen carloads of beef cattle passed through Dunsmuir Thursday, on route to Sacramento and San Francisco. They were shipped from Gazelle and Montague. Cattle buyers in Coos county, Or., are paying \$14 a head for choice last spring calves and 6 cents per pound for dressed beef.

SOLANO.

NORTH WIND WAS WELCOMED.—Vacaville Reporter, Feb. 10: The north wind which began to blow Sunday was very welcome. It dried up the moist fields and permitted grain sowing to be renewed. It converted the bogs into a condition resembling roads. Generally the north wind is an unmitigated evil, but it was welcome this time.

STANISLAUS.

ALFALFA BRINGS PROSPERITY.—Modesto Herald, Feb. 1: Simon Newman of Newman speaks glowingly of the prosperity of farmers on the alfalfa belt, and predicts a splendid future for that part of the county where irrigation is practicable. The alfalfa area on the West Side is being largely increased and the expansion will continue until the limit of available water is reached.

TULARE.

HORTICULTURAL COMMISSIONERS' REPORT.—Tulare Register, Feb. 9: The Board of Horticultural Commissioners made a very favorable January report as to the condition of orchards. There is San Jose scale in some orchards near the roads, where the ladybug will not work on account of the dust drifting in from the highways, but most of the orchards are found to be remarkably clean. The cool and foggy weather of January has kept the trees more than usually dormant, and if frosty nights continue through February, orchards will come to the beginning of March in good condition to withstand frost.

SALT BUSH.—Tulare Register: Many people tried to start salt bush some time ago, but with such indifferent success that most of them gave it up as a bad job without trying again. Yet here and there a man stuck to it, and with such encouragement that they are planting more. One man put out ten acres this winter and it is

coming up thick. This man says that if he had a quarter-section seeded to it, with as much stock as it would keep, he would be able to ride around in his carriage all the time. It has been found by a grower at Traver that salt bush is very rich in butter fat, the test showing as high as 5%, when cows on other feed are yielding 3.75% to 4%.

YOLO.

WIDE TIRES ARE BEST.—Woodland Democrat: Many farmers are providing themselves with the wide tire wagons. They say wide tires are best on general principles, law or no law.

For the Baby

The fifty-cent size is just right for the baby. A little of it in the bottle three or four times a day will supply precisely the fat all thin babies need. If your baby does not gain in weight as fast as you would like, try

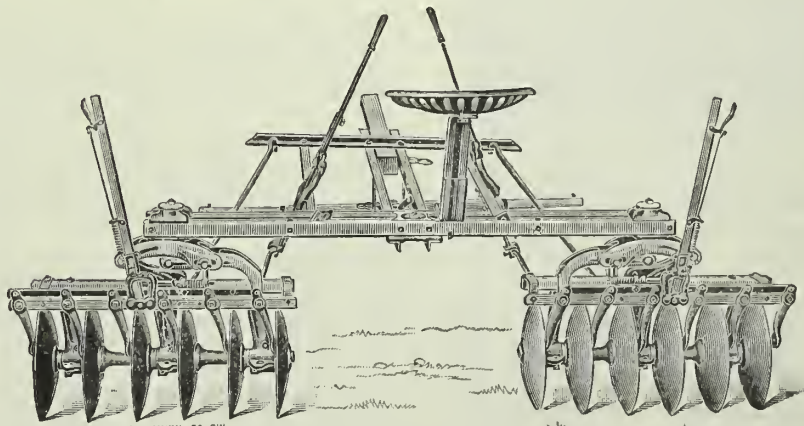
Scott's Emulsion

The result will please you. If the baby nurses, the mother should take the emulsion. It makes the baby's food richer and more abundant; only buy the dollar size—it's more economical.

Both mother and child will feel at once its strengthening, upbuilding and fat-producing properties.

At all druggists; 50c. and \$1.00.
SCOTT & BOWNE, Chemists, New York.

Osborne Columbia Disc Harrow.



A HARROW EVERY ORCHARDIST SHOULD HAVE.

BECAUSE: It is Reversible. It is Flexible. It has Extension Head by which gangs can be closed up or extended on same Head. It has two levers. All combined in one Harrow.

Osborne "Rival" Disc Harrow.

It is not Reversible or Flexible.

A good tool at a low price.

Osborne Sulky Spring Tooth Harrow.

The only practical Riding Spring Tooth Harrow on the market.
Also made without sulky attachment.

Osborne Lever Peg Tooth Harrow.

Adjustable diamond-shaped teeth.

Frame bars of high carbon steel.

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Horse Owners! Use GOMBAULT'S



Caustic Balsam

A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price, \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

Love Is All.

In protest against the sentiment expressed in
"The Man with the Hoe."

Let labor boldly walk abroad
And take its place with kings,
For who has labored more than God,
The maker of all things?

The time has come, aye, even now it is,
To rank that parable in Genesis
Of God's great curse of labor placed on
man,

With other fairy tales. Why, he began
All work Himself! He was so full of force
He flung the solar systems on their course
And builded worlds on worlds; and, not
content,
He forges on His white-hot anvil—space—
New stars to tell His glory and His grace.

Who most achieves is most like God, I
hold;
The idler is the black sheep in the fold.

Not for the hardened toiler with the hoe
My tears of sorrow and compassion flow.
Though he be dull, unlettered and not fair
To look upon: though he is bowed with
care,

Yet in his heart if dear love fold its wings,
He stands a monarch over unloved kings.

One sorrow only in God's world has birth—
To live unloving and unloved on earth:
One joy alone makes life a part of heaven—
The joy of happy love received and given.

Down through the chaos of our human
laws
Love shines supreme, the great eternal
cause.

God loved so much his thoughts burst into
flame,
And from that sacred source creation
came.

The heart which feels this holy light
within
Finds God and man and beast and bird
its kin.

All class distinctions fade and disappear.
Death is new life, and heaven he sees
a-near.

Brother is he to "ox" and "seraphim,"
"Slave to the wheel," mayhap, yet kings
to Him.

And millionaires seem paupers if from them
Life has withheld its luminous great gem,
Or if his badge be scepter, hoe or hod,
That man is king who knows that love is
God.

—Ella Wheeler Wilcox.

"How!"

There are a number of ways in which
you can test a woman's beauty and
prove that it is vain. You can see her
after she has danced until dawn and
drives home in the cold, blue light. You
can drop in upon her when her negligé
is such in reality, and not a matter of
ruffles and lace. You can see her rise
dripping from the surf, no daughter of
foam and fire, but a creature of dank
looks and purple lips. Or you can look
at her after she has gone twice round
the links in the blazing sun and dust-
fraught wind. All these are likely to
convince you of the deceitfulness of
beauty. But some women are so fair
as to bear each and all of these tests.
Yet if you were to put them in a smoky,
close sleeping car, anywhere between,
say, Tucson and Yuma, at the middle
of an August day, they might then be-

IF you look at a dozen com-
mon lamp-chimneys, and
then at Macbeth's "pearl top"
or "pearl glass," you will see
the differences—all but one—
they break from heat; Mac-
beth's don't; you can't see that.

Common glass is misty,
milky, dusty; you can't see
through it; Macbeth's is clear.

Tough, clear glass is worth fine work;
and a perfect chimney of fine tough
glass is worth a hundred such as you
hear pop, clash on the least provocation.

Our "Index" describes all lamps and their
proper chimneys. With it you can always order
the right size and shape of chimney for any lamp.
We mail it FREE to any one who writes for it.

Address MACBETH, Pittsburgh, Pa.

come, as every one else, so ugly that it
would increase your ugliness and bad
temper to be forced to look at them.
When a woman under these last condi-
tions is still pleasant to contemplate,
you may set it down that her charms
are real and enduring.

Harrington did so in the case of the
girl in Section 2. He was Section 6 him-
self, and her back was turned to him;
but she faced the bevelled mirror, so
considerately built in the end of the car,
and he sat so that he could watch her
reflected in it. Besides which he could
see her back hair, which was brown and
looked soft, and which escaped in wisps
that curled up tighter and tighter as
the day grew hotter and hotter. Har-
rington thought about a French novel
he had once read, whose heroine had
"boucles folles qui frissaient autour de
sanuque." He has always liked that
idea, but had never seen it realized
until now.

There were only four people in the
Pullman—a man and a woman who
were not interesting, Harrington and
the girl. Harrington entered the train
at El Paso. The girl was there already.
The only mark on her traps was a silver
tag strapped to her satchel, and Har-
rington had not been able to get within
reading distance of it. He had tried
hard enough. Neither had he been able
to screw up his courage to the point of
questioning the conductor. He did not
believe in discussing women with the
first comer. So he put his feet upon
the opposite seat and leaned back and
watched the boucles folles, and noted
how prettily her skin flushed, and what
a nice shadow her lashes made on her
cheeks. Life would have been a far
pleasanter thing if he could have talked
to her.

The prospect beyond the cinder guard
was so monotonous. That, of course, is
putting it very much more mildly than
Harrington did. "Ben Bolt" began
to run in his head; which is bad enough
in itself, but when it times itself to the
te-rumpety-rump, te-rumpety-rump,
te-rumpety-rump of the wheels, is
enough to drive a sober man to drink.
The only reason Harrington did not
drink now was because he had already
had one bottle of beer, and he was
afraid of the opinion of the girl. Be-
sides, it flushed his face. "And trem-
bled with . . . tears . . . at

your . . . frown"—the
wheels were turning more slowly. There
was that ugly hush of uncertainty, of
interruption in the natural sequence of
things, that falls when a train slows
down in the midst of the prairie. The
train stopped and the airbrake hissed.
Then all was a silence that let you hear
the blood running in your veins, until
there was a crunch of footsteps on the
cinders beside the track.

Harrington put up his window and
looked out. A group of men stooping
about a wheel of the forward car and
the ringing taps of a hammer upon iron
told the story. It was a hot box. Har-
rington drew in his head. Pretty soon
he got up and put on his hat and loitered
out. When he had joined the group he
glanced along at his ear. The girl was
leaning out on her window. He felt
that in a time of emergency one should
not handle a situation a la Somers or
Peter Gray. He put his hands in his
pockets, which is always the way you
show that you are just being casual and
offhand and making no particular point
of it, and sauntered back along the
cinder bed until he stood beneath her
window. Then he raised his hat and
told her it was a hot box. She said,
"Thank you very much," and hoped it
would not delay them, and was very
sweet and civil about it, but it was
borne in upon him, for all that, that it
would not be expected of him to con-
tinue the conversation. "And Peter
takes the North again; and Somers
takes the South," he murmured as he
continued on down to ask the conductor
how long they would have to stop, and
lighted a cigarette. The conductor did
not know. Harrington had not sup-
posed that he would. But he went
back into the train thoroughly dis-
gusted with everything.

He flung himself into Section 6 with a
sigh that could be heard in Section 2,
and looked out disconsolately over the
prairie, so dull and dreary to those who

see it with dull and dreary eyes. The
air went in heat waves so that the dis-
tance seemed to quiver, and the whole
prospect was vile. He sat up and
pressed the electric button. The bell
fairly pealed in the silence, reverberated
to the horizon. The girl started and
looked away from the window. Har-
rington told the porter to bring him
some ice beer. The girl was watch-
ing him in the mirror. It was the first
time she had paid the smallest attention
to him. He caught her eye—and, per-
haps she did not smile, but it was not
quite a stony stare either. He felt
encouraged. And that to the extent of
ordering another glass, filling it, and
taking it to Section 2. Might he offer—
She looked startled, but also uncertain.

"It's awfully cold and nice."
She reached out a hesitating hand
and flushed yet more pinkly at the
reckless brazenness of it. She raised
her glass and Harrington raised his hat
and said "How!"

Then both stopped with cups at their
very lips, and there was an interval of
sound which her eyes filled with a
beautiful light.

"Why didn't you tell me?" she
cried.

"Are you"—he began.

"Yes. Of course. My father's Major
Hill. I might have known you were,
too, if I had seen your academy but-
ton."

"You never took the trouble to look
at me," Harrington suggested. "I'm
Harrington, of the Fourth. I came on
from Bliss."

"I am going to the Presidio."

Harrington was going to the Presidio,
too. By virtue of all of which he went
back to his section and got the beer
bottle and sat himself down in Section
2, with it beside him on the window
ledge. The old Indian salutation was
password to the ranks of friendship.
By virtue of it they had known each
other, and all of each other's friends
and traditions, for half a century at
least.

"I've been down to Bliss on a court
martial," Harrington explained. Where
have you been?"

"I've been East at school. 'It's
very funny, isn't it? We might never
have known one another until we had
both reached the post. And we are in
the same regiment, too. What year
were you?"

He slipped off his class ring and held
it out to her. She studied it intently.

"Ninety-seven. Then you are a sec-
ond lieutenant."

"Altogether at your service. Why
the dickens didn't we divine this sooner?
It's been horribly dull—this beastly
desert."

Miss Hill protested. "It's not a
beastly desert."

"It isn't now," he admitted. Which
she ignored, and went on:

"It's very beautiful and grand if you
only understand it. I dare say you
were not brought up on it?"

"I wasn't, thank Heaven!"

"Well, I was. I was born on it. I
made my first mud pies with Gila wa-
ter, I rode my first burro around
Thomas, and had my first spill into this
alkali dust. I suppose one has to be
used to it from the very beginning to
love it."

Harrington began to feel that it was
anything but creditable not to love it.
He defended himself. "New England
gave me birth. And I still prefer the
lilac to the mesquite bush. It's all a
matter of education, of course."

"Of course," she agreed. "Tell me
about the Presidio."

He told her about it with zest for
word painting which California fosters,
and left her with the belief that she
was about to enter paradise on earth.

"You play golf, of course?"

It is the question that must come
sooner or later. She answered that she
did not; and Harrington was glad, be-
cause now he could teach her, and life
would be all one beautiful driving little
white balls across green slopes and
fields of fleurs-de-lis, with a blue sky
overhead and a sapphire sea beyond. It
was eternal spring in Harrington's
heart just now, so he overlooked the
detail that fleurs-de-lis don't bloom in
August.

Outside of Section 2 was a stuffy

sleeping, where sat a scandalized man
and woman, whispering and casting
looks; and beyond that was a gleaming
desert, where the thermometer would
have registered incredible things. But
in Section 2 all was charming. The
crunch of feet on the cinders, the tinkle
of the hammer on the hot box, the mur-
mur of men's voices, came faintly to it.
"How long shall we stop here?"
Miss Hill asked.

Harrington did not know, and said
so. Neither did he care; but he kept
that to himself. He liked southern
Arizona. Then Miss Hill wanted to
know "Where are we?"

"The question is the answer," he told
her. She looked puzzled. "Do you
understand Spanish?" She remem-
bered some from the days of Mexican
nurses and citizen packers. There had
been a time when it was her most
fluent speech. "Well, then, the name
of the garden spot is Adonde—at least,
within half a mile of it."

"That means 'where,' " she said.
"Isn't it jolly well named? To look



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PAGE
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out upon this world here is to ask 'where,' and 'whither,' and 'why,' and 'what for?' The plains are such forcible reminders of the eternal unget-at-ableness of things in general."

Miss Hill was resentful. "I dare say they are not all measured off by human foot rules like New England. But they are lovely. I am quite sure I shall not like the Presidio links half so well."

This was dangerous. Harrington launched off upon the delights of golf. The conductor called "All aboard!" and feet hurried along the cinder bed. But the train was going thirty miles an hour before they really realized it had started; and they were at Yuma and had twenty-five minutes in which to eat dinner before they were aware that they had passed Adonde. Adonde, indeed! It was already only too plain where and whither.

It was plainer still by the time they crossed on the ferry. Major Hill saw it, and so did Mrs. Hill, and some others who had come over to the train, so they were very considerate about it, and went to listen to the music in the social hall. Harrington leaned on the rail beside, and showed her the gulls, and said this was San Francisco, as though he were personally responsible for it—which is the way we get in California. It was only too evident, even to the watching strangers, where and whither. Where they were was in the seventh heaven of contentment. And whither they tended was reached just two months later.

Upon that occasion, which was none other than his wedding day, they called upon Harrington for a toast. He stood up and looked at Mrs. Harrington. The boucles folles were still there, though half hidden by the white veil, and she was blushing as pinkly now as upon that first day in the stretch and silence of the prairie, that ever memorable and delightful day at the place of the unanswerable question, Adonde. Harrington thought of that day, and, raising his glass, made in the opinion of all assembled the flattest failure of a toast. But his wife understood, and the others did not matter. He had looked into her eyes and said, "How!"—The Argonaut.

Fruit and Medicine.

Fruit, says "Modern Medicine," is chiefly water, the amount of nutrient material it contains varying from 5% to 10% in most fruits, rising to a higher figure only in dried fruits, such as dried grapes, prunes, dates, etc. The writer has succeeded in reducing excessive weight in the most satisfactory manner by prescribing a diet consisting almost exclusively of grapes, allowing only a bit of thoroughly dried bread or sweet-back in connection with the fruit. In some cases the fruit may be allowed as often as three or four times a day, to relieve a sensation of emptiness.

Remembering the interesting fact pointed out by Bouchard, that rheumatism is really a toxemia, resulting from the decomposition of food stuffs in a dilated or prolated stomach, we may also attribute the beneficial effects of a fruit diet in rheumatism and allied conditions to its value in suppressing the formation of poisonous substances in the alimentary canal.

We must remember that an article in a magazine is but the opinion of one person—and that in medical magazines, especially, we find the truth of the saying that "doctors differ." In practice, the last thing taken is too often regarded as the cure. A large series of observations is necessary before a fair deduction can be made. In relation to the use of natural fruits in rheumatism, it may be said, however, that there is good reason for the belief that they are very useful.

Washing in Egypt is usually done by the men. The Egyptian washermen stand on the banks of the Nile and slap the wet clothes with the noise like the shot of a pistol on the smooth stones at the edge of the running water, and such women as wash pound the dirt out of their clothes in the same way.

Eggs must be cold and very fresh to whip well.

Growth.

The full-blown rose is perfect, so they say; And, while they praise, the petals drop away.
Give me the rose just blushing into bloom—
To-morrow's queen that knew no yesterday.

Yet if the petals fell not one by one,
When, think you, was the time of fruit begun?
Or whence the seed that from the ground may give
An hundred buds to burgeon in the sun.
—Arthur Chamberlain.

Women in Persia.

But life is sad in Persia, especially the woman's life. The law of Islam allows each man to have four wives, and as many concubines and slave girls as his hand can hold. His wives, also, he may divorce at will, says Robert E. Speer in Frank Leslie's. Our word "bosh" is the Turkish word by which a Moslem divorces his wife. It doesn't count if he says it only once or twice, but if said the third time the woman must go, and there is no recourse. Down along the Caspian the men often marry their wives in the spring, so as to have the benefit of their labor in the rice fields, and divorce them in the fall so as to escape supporting them during the winter. At Meshed, where the pilgrims come, is a large population of temporary wives who are married to the pilgrims, far from home and families, for as long a time as the pilgrims remain at the shrine—a day, or a month. The Mohammedan priests draw up the contracts for these temporary alliances. Lord Curzon, who has been there, says Meshed, though the holiest city in Persia, is the wickedest in Asia. There are no words for wife and home in Persian. There are no homes and few wives. It is curious to hear a handsome woman say: "I have told my husband if he marries another wife I shall poison him, and I intend to do it." Or to ask a woman about her home life, and get the answer, "Love my husband? Oh, yes, I love him. I love him as much as a sieve holds water."

In the cities the Moslem women—and all but about sixty thousand or so of the four million women of the land are Moslems—never appear in public save dressed in black and heavily veiled, the eyes looking out through a small meshed space of veil. Custom, fear of men, and not modesty, impose this dress. The poorer women or the women in the villages wear no veils, or throw the veils back and leave their faces uncovered, unless now and then in a coquettish way they draw a fold of the dress across the mouth. The Jewish women often dress for the street as the Moslem women do. One of the pictures shows a group of Jewish men and women who have come, with some Moslems, too, to consult one of the Jewish doctors in Teheran. The Armenian, Nestorian and Fire Worshipper city women give somewhat less heed to concealment, and the village women are quite free. All of these in the country, and the city ladies in their houses, dress in bright colors—red and green and yellow; and the village streets and highways get their little brightness from them, or from the equally gay dress of the men. The Jewish girls are adorned also with trinkets and jewelry, especially with the little silver cases containing portions of the Old Testament law. The Fire Worshipers, or Guebres, are but few in Persia now, though it is the land of their origin; but their women can be picked out at once in Teheran, or in the few cities where they are found, by their dress. Outside of Teheran is the Tower of Silence, where, believing neither in cremation nor in burial, the Fire Worshipers expose their dead. From the hillside it looks out in solemn stillness over the broad, dead plain, even as the dead of this dying people look up in solemn stillness from their ghastly burial place to the unanswering sky.

THERE is a healthful hardness about real dignity that never dreads contact and communion with others, however humble.—Washington Irving.

DOMESTIC ECONOMY.

Rosepod Preserves and Marmalades.

A sample of marmalade sent to Meehan's Monthly by Mrs. A. Millard of Plattsburg, N. Y., made from the pods of the Chinese Mandarin rose, was of such unusual excellence, that, at the editor's request, she sent the following recipes:

ROSEPODS MARMALADE.—The fruit of *Rosa rugosa* is the most suitable for preserving, as the pods are large, fleshy and of high color. To make marmalade, the pods want to be picked fully ripe, yet before the frost touches them. Wash, trim and seed the pods, cover with water, steam until tender and strain. Mash through a colander with a wooden spoon and add to one pint of the pulp three-fourths of a pound of granulated sugar. Put on to boil and constantly stir for twenty minutes or more, then fill in jars or jelly glasses.

ROSEPOD PRESERVES.—Wash, trim and seed the pods, cover with water and boil for five minutes, then strain. Boil to a syrup three pounds of granulated sugar, one-half cupful of vinegar, one-half cupful of water, skim until clear. To this add about four pounds of the parboiled rosepods to boil on a moderate fire to boil for one-half to one hour.

Neither preserve calls for any spices, as it would take away the fine flavor of the fruit itself.

Yet, if spices are desired, they ought to be added whole—a little of ginger root, cloves and stick cinnamon, which must be taken out afterwards.

Hints to Housekeepers.

The sweet Spanish peppers should be eaten with salt the same as radishes.

Olives, celery, and salted nuts are passed between the courses to prepare the palate for the dishes which are to follow.

To brighten tortoise shell combs and pins rub them with alcohol, and after drying with a soft rag use bismuth powder to render them bright.

Do not allow paint to be cleaned with soap or soda. Ammonia is far better. Use one tablespoon to every gallon of water required to clean the woodwork.

Serve souffles in separate courses; omelettes also. Small sandwiches, or bread and cheese, may be passed with them. A fish souffle will take the place of a fish course.

The habit of sucking the thumb, so often practised by children, is greatly to be condemned. Not only does the child find it difficult to lose the habit, but the result is often an unsightly mouth.

For use in polishing knives a good device is formed of two flat pieces of material, having polishing cushions on their opposing faces, the upper member being pivoted on the lower to admit the knife blade between the two.

The apple is the most wholesome fruit that one can eat, provided it is perfectly ripe, and is eaten during meals, not at the beginning or end of meals, says a prominent physician. It is a most nutritive fruit, and more easily digested than any other food.

To take stains off the fingers, keep a piece of cut lemon on your washstand and rub the spot with this previous to wetting. If this is not successful, try a piece of pumice soap. Even the pulp of a lemon, which has had the juice taken from it, is useful for this purpose.

In cooking vegetables, those of one size should be selected, if possible, otherwise the larger ones should be cut into pieces to equal the smaller. Onions may be cut nearly through, leaving just enough uncut to hold the pieces together. In this way all will be cooked at the same time.

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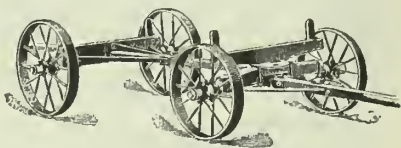


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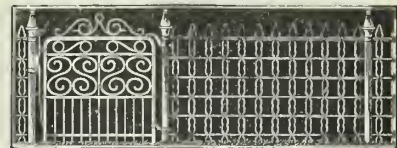
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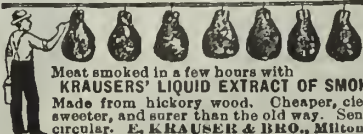
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Feb. 14, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	Feb.	May.
Wednesday.....	65½@66½	67½@68½
Thursday.....	—@—	68½@69½
Friday.....	68½@69½	68½@69
Saturday.....	68½@69½	68½@69
Monday.....	—@—	—@—
Tuesday.....	67 @68½	69 @68½

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday.....	5s 10¼d	5s 9¼d
Thursday.....	5s 10¼d	5s 10¼d
Friday.....	5s 10¼d	5s 10¼d
Saturday.....	5s 10¼d	5s 10¼d
Monday.....	5s 10¼d	5s 10¼d
Tuesday.....	5s 11½d	5s 10¼d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 04 @1 02½	1 09 @1 07½
Friday.....	1 02½@1 02¼	1 07¼@1 02¼
Saturday.....	1 03¼@1 03½	1 08½@1 08¼
Monday.....	—@—	—@—
Tuesday.....	1 03¼@1 02¾	1 09¼@1 08¼
Wednesday.....	1 01½@1 02½	1 08½@1 08½

*Lincoln's birthday.

WHEAT.

The wheat market has shown improved condition since last review, both here and abroad. There was a better export demand and a quotable advance of about 25c per ton on immediate deliveries. While the improvement is not very marked, it is decidedly encouraging, coming at a time when depression is generally experienced and anticipated, owing to the near approach of the first Monday of March, when the tax gatherer makes his annual levy. The visible supply in the United States showed a decrease of about half a million bushels. The quantity sent afloat for the week was reported at 4,326,000 bushels, being nearly a million bushels less than preceding week. France was a buyer to a moderate extent in the Chicago market. Liverpool futures showed a gain of about 2½c. per cental, and Chicago options moved upward 1¼@1½c. per bushel. On the local Call Board the improvement for the week was about 1c. for May and 1½c. for Dec. wheat. At this writing (Wednesday noon) the speculative market showed less strength than on preceding days, but spot wheat remained steady.

WHEAT.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, \$1.04@1.01½.
December, 1900, delivery, \$1.09½@1.07½.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at \$1.01½@1.02½; December, 1900, \$1.08½@1.08½.

California Milling.....	\$1 00 @1 05
Cal. No. 1 shipping, alongside.....	98½@1 01¼
Oregon Valley.....	95 @1 02½
Walla Walla Blue Stem.....	95 @1 05
Walla Walla Club.....	85 @1 02½
Off qualities wheat.....	82½@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	68½d@69d	68½d@69d
Freight rates.....	25@27s	37@38½s
Local market.....	\$1 12¼@1 15	98½@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

There has been a heavy outward movement the current week, mainly to China and Japan, one steamer taking 18,013 barrels and another 11,340 barrels for above destination. This flour is going mainly on contract at low figures. Trade on local account continues of rather light volume and market remains about as favorable to buyers as previously noted.

Superfine, lower grades.....	\$2 40@2 60
Superfine, good to choice.....	2 65@2 90
Country grades, extras.....	3 00@3 25
Choice and extra choice.....	3 35@3 60
Fancy brands, jobbing.....	3 60@3 75
Oregon, Bakers' extra.....	3 00@3 40
Walla Walla, Bakers' extra.....	3 00@3 40

BARLEY.

The market on local account has been showing a little more activity than for some weeks preceding, and there was a slightly firmer tone in consequence, although no appreciable change in quotable rates. With the tax time near at hand,

it is not likely there will be any special strength developed during the coming fortnight. Shippers did not appear to be doing much, and, so far as made public, did not bid above previous rates.

Feed, No. 1 to choice.....	75 @ 77½
Feed, fair to good.....	60 @ 72½
Brewing, No. 1 to choice.....	87½@ 97½
Chevalier, No. 1 to choice.....	1 00 @1 07½
Chevalier, No. 2.....	— @ —

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

Seller, 1900, new, —@—.
May, 1900, delivery, 72½@71½c.
December, 1900, delivery, 72½@—c.
Wednesday, at regular noon session of the Call Board, May, 1900, No. 1 feed sold at 71½@71½c.

OATS.

There was an improved demand for White and Gray oats, and more firmness to the market for these descriptions, but in the matter of quotable values there were no appreciable advances to record. Full current quotations were realized, however, for best qualities, while for a fortnight or more preceding they were little more than asking figures. On the other hand, market for colored oats was dull and weak, especially for Blacks, with considerable selling pressure exerted on same.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 15 @1 22½
White, poor to fair.....	1 07½@1 12½
Gray, common to choice.....	1 10 @1 20
Milling.....	1 15 @1 25
Surprise, good to choice.....	1 20 @1 30
Black Russian.....	90 @1 02½
Red.....	95 @1 20

CORN.

Market for this cereal has been quiet most of the week, and no changes of consequence have been developed, either in general tone or in values quotable. Large corn is in fair supply, but is mostly the imported article and is held principally by local millers and jobbers. Small Yellow is in too limited stock to admit of other than very light jobbing operations.

Large White, good to choice.....	1 02½@1 05
Large Yellow.....	1 02¼@1 05
Small Yellow.....	1 40 @1 45
Eastern Mixed.....	1 00 @1 02½

RYE.

There is not much doing in this cereal, but when transfers are effected they are at generally unchanged figures, market remaining steady.

Good to choice, new..... 1 02½@1 05

BUCKWHEAT.

An exceedingly quiet market, with offerings and demand both insignificant. There is no change to note in quotations.

Good to choice..... 2 00 @2 10

Sliverskin..... — @ —

BEANS.

While the market has shown less activity than for several weeks past, values are being well maintained. The more quiet condition prevailing is not so much due to decreased inquiry as to very limited offerings of desirable qualities and to the decidedly stiff views of holders. A considerable proportion of the choice beans in stock are held above current rates and are practically off the market.

Pea, fair to good, 100 lbs.....	3 10 @3 35
Small White, good to choice.....	3 10 @3 25
Lady Washington.....	2 90 @3 10
Butter, small.....	3 75 @4 00
Butter, large.....	— @ —
Pinks.....	2 65 @2 85
Bayos, good to choice.....	3 25 @3 50
Reds.....	3 75 @4 00
Red Kidneys.....	4 00 @4 25
Limas, good to choice.....	5 00 @5 15
Black-eye Beans.....	4 50 @4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @2 75
Garbanzos, small.....	2 00 @2 25

DRIED PEAS.

Quotable rates remain as previously noted, with market inactive, owing to absence of offerings.

Green Peas, California.....	2 00 @2 15
Niles Peas.....	2 00 @2 15

WOOL.

Market remains quiet but has a firm tone. Outside of stocks in the hands of scourers, there is practically nothing offering at present. There is not likely to be any noteworthy business until Spring wool puts in an appearance. Shipments from the State in 1899 are reported at 33,000,000 lbs. grease wool, 5,000,000 lbs. scoured and 1,100,000 lbs. pulled. About 10,000,000 lbs. of above was of stock carried over from previous years.

SPRING.

Oregon Eastern, choice.....	13 @16
Oregon Eastern, fair to good.....	11 @13
Oregon Valley.....	17 @20

FALL.

Humboldt and Mendocino.....	16 @17½
Middle Counties, defective.....	9 @12
Northern, free.....	11 @14
Northern, defective.....	9 @11
Southern Mountain.....	9 @11
San Joaquin Plains.....	— @ —
San Joaquin Lamb.....	— @ —

HOPS.

Previously reported conditions prevail in the hop market, and there is little or no prospect of there being any radical changes developed in the situation during the balance of the season. Sales are possible only at former low range of values, and for inferior qualities it is difficult to secure custom at any figure. While there are some hops still remaining in Washington and liberal quantities reported in Oregon, there are not many left in first hands in this State.

Good to choice, 1899 crop..... 6 @ 9

HAY AND STRAW.

The hay market remains devoid of strength or of encouraging feature for the selling interest. For other than a little select Wheat hay, which sells in a moderate way at \$9.00@9.50 per ton, the market is wholly lacking in firmness. Common to medium grades are being urged to sale in much larger quantities than is warranted by the demand or the necessities of consumers. Straw is in ample supply and market lacks strength.

Wheat.....	6 50 @ 9 00
Wheat and Oat.....	6 50 @ 8 50
Oat.....	6 00 @ 7 50
Barley.....	5 00 @ 7 00
Alfalfa.....	6 0 @ 7 50
Stock.....	4 50 @ 5 50
Compressed.....	6 50 @ 9 50
Straw, ½ bale.....	30 @ 45

MILLSTUFFS.

Bran continued to be offered at comparatively low figures, with demand not very brisk. Prices for Middlings and Shorts were without marked change. Rolled Barley and Milled Corn were in the main steadily held.

Bran, ½ ton.....	12 50 @13 00
Middlings.....	15 00 @17 50
Shorts, Oregon.....	12 50 @15 00
Barley, Rolled.....	16 50 @17 00
Cornmeal.....	23 00 @23 50
Cracked Corn.....	24 00 @24 50

SEEDS.

There is little doing in this line at present, and nothing to indicate that there will be any material change for some weeks to come. Quotations remain as previously noted, but for most kinds are necessarily nominal. Alfalfa Seed is in light stock, and is selling slowly at current stiff rates, jobbers not caring to carry more than enough for immediate orders.

Mustard, Trieste.....	3 25 @3 50
Mustard, Yellow.....	4 50 @4 75
Flax.....	2 00 @2 25

	Per cwt.
Canary.....	3¼ @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4½
Timothy.....	4 @ 4½
Alfalfa, Utah.....	7 @ 9

BAGS AND BAGGING.

Business in this department is light and is likely to so continue for several months, so far as most lines are concerned, Wool Sacks being about the only exception. The latter will soon come into request for the spring clip. In quotable rates there are no changes to record.

Calcutta Grain Bags, buyer June-July.....	6¼@—
Calcutta Grain Bags, spot.....	6¼@—
San Francisco Grain Bags, 22x36, spot.....	6¼@—
State Prison Bags, ½ 100.....	5 65@—

Wool Sacks, 4 lbs.....	— @32½
Wool Sacks, 3½ lbs.....	— @28½
Fleece Twine.....	7¼@—
Gunnies.....	— @12½
Bean Bags.....	4¼ @5¼
Fruit Sacks, cotton.....	6¼@ 7¼

HIDES, PELTS AND TALLOW.

Hide market is dull and weak for Wet Salted. Dry Hides are on the decline, with the exception of Calf, but all dry stock is in good demand at rates quoted. Pelts sell readily at prevailing figures. Tallow is in fairly active demand at unchanged rates.

HONEY.

Beyond the filling of small orders by jobbers, there is practically nothing doing in honey. Offerings are light, and are mainly Comb. Quotations are unchanged, but at present represent little more than jobbing rates.

Extracted, White Liquid.....	7¼ @ 8
Extracted, Light Amber.....	7 @ 7½
Extracted, Amber.....	5 @ 5½
White Comb, 1 lb frames.....	11¼ @12¼
Amber Comb.....	8 @10

BEEFWAX.

A shipment was made the past week of 3200 lbs. by steamer to Germany. Stocks are small and prices steady.

Good to choice, light, ½ lb.....	26 @27
Dark.....	24 @25

R. Hall's Pulmonary Balsam.

For COUGHS and COLDS.

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MOORE, FERGUSON & CO.

WOOL, GRAIN, FLOUR

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General Commission Merchants.

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Old Tops, Dashes and Fenders re-covered if sent to us. We sell Trimming Material of all kinds, also Top Dressing, Chamolli Skins, Sponges, etc. Write for Prices and How to Measure. CALIFORNIA TOP CO., 222 Mission Street, San Francisco, Cal.

We have a large stock of low-branched

WASHINGTON NAVE, ORANGE TREES,

Also 100,000 seedling orange trees in nursery rows, for sale.

SATSUMA OR OONSHIU ORANGE TREES, 50c to 75c EACH.

General Price for Orange and Lemon Trees from 10c to 60c.

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ORANGE COUNTY NURSERIES.

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We also have PLUMS, APPLES and SOFT SHELLLED WALNUTS.

Carry a full line of Ornamental and Citrus Stock

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F. I. MATTHEWS, Proprietor.

General Machine Work, Shafting, Hangers, Pulleys, ETC., ETC.

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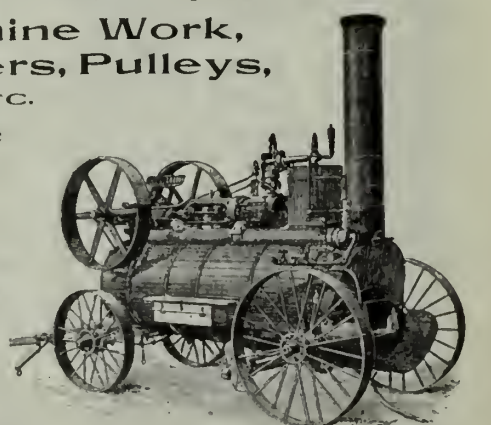
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Old Engines Repaired and Mounted on New Boilers.

Extras for Rice's, M. F. & K., and Heald Engines always on hand, and other Extras furnished to order on short notice.

Straw Burning Boilers at lowest prices; also Irrigation Pumps, etc.

521 THIRD ST., OAKLAND, CAL.



LIVE STOCK AND MEATS.

Market for Beef has developed no special changes since last review. Supplies and demand about balance at the rates prevailing. Veal continues in limited receipt and commands tolerably firm figures. Mutton is not in excessive stock and market shows steadiness. Lamb is commanding good prices, under light offerings. Hogs brought slightly higher figures than last quoted, with market firm for small and medium sizes.

Beef, first quality, dressed, net $\frac{1}{2}$ lb.	6 1/2 @ 7
Beef, second quality	6 1/4 @ —
Beef, third quality	5 1/2 @ 6
Mutton—ewes, 7 @ 7 1/2 c; wethers	7 1/2 @ 8
Hogs, hard grain fed, medium	5 1/2 @ 5 1/2
Hogs, small, fat	5 1/2 @ 5 1/2
Hogs, large, hard	5 1/2 @ —
Hogs, acorn-fed	— @ —
Hogs, feeders	5 @ 5 1/2
Hogs, country dressed	5 1/2 @ 6
Veal, small, $\frac{1}{2}$ lb.	7 @ 9 1/2
Veal, large, $\frac{1}{2}$ lb.	7 @ 8
Lamb, spring, $\frac{1}{2}$ lb.	11 @ 12 1/2

POULTRY.

For choice young Chickens, more particularly Fryers and Large Broilers, the market was a little firmer than preceding week, offerings of above kinds being light. Old Chickens which were extra large and fat sold at 86 per dozen, but there were too few of this sort to admit of the figures being used as a regular quotation. Turkey market was without quotable improvement. The limited demand which exists at present for this fowl is mostly for Hens. Ducks and Geese sold at generally unchanged rates, but were in light receipt and mostly from the East.

Turkeys, dressed, $\frac{1}{2}$ lb.	12 @ 14
Turkeys, live hens, $\frac{1}{2}$ lb.	11 @ 12 1/2
Turkeys, live gobblers, $\frac{1}{2}$ lb.	9 @ 11
Hens, California, $\frac{1}{2}$ dozen	4 00 @ 5 00
Roosters, old	4 00 @ 4 50
Roosters, young (full-grown)	4 50 @ 5 00
Fryers	4 50 @ 5 00
Broilers, large	4 50 @ 5 00
Broilers, small	3 00 @ 4 00
Ducks, $\frac{1}{2}$ dozen	4 00 @ 5 00
Geese, $\frac{1}{2}$ pair	1 75 @ 2 00
Goslings, $\frac{1}{2}$ pair	1 75 @ 2 00
Pigeons, old, $\frac{1}{2}$ dozen	1 25 @ 1 50
Pigeons, young	2 50 @ 3 00

BUTTER.

The market for fresh product continued favorable to buyers, unless in the case of a few fancy Northern creameries, which are very near the end of their season and are having temporarily more buyers than butter. When custom had to be sought, prices had to be shaded. Packed stock is light, is mostly creamery tub and is rather steadily held.

Creamery, extras, $\frac{1}{2}$ lb.	25 @ —
Creamery, firsts	24 @ —
Creamery, seconds	23 @ —
Dairy, select	22 1/2 @ 23 1/2
Dairy, seconds	19 @ 21
Dairy, soft and weedy	— @ —
Mixed store	14 @ 16
Creamery in tubs	18 @ 21
Pickled Roll	— @ —
Firkin, California, choice to select	19 @ 22
Firkin, common to fair	16 @ 18

CHEESE.

Arrivals are not particularly heavy, but are ahead of the demand, and with stocks accumulating the market is weak. No great declines, however, are anticipated in values in the near future, as moderate reductions from current rates would be apt to attract shipping orders of considerable magnitude.

California, fancy flat, new	10 @ —
California, good to choice	9 @ 9 1/2
California, fair to good	8 1/2 @ 9
California Cheddar	— @ —
California, "Young Americas"	9 @ 11

EGGS.

Although there were no radical declines in quotable rates from the figures of previous week, the market lacked firmness, buyers operating at a lower range of prices than were current at date of last review. Demand showed improvement, but supply was more than ample. Eastern cold storage firsts were laid down here at 10c, and seconds were offered at 9c.

California, select, large, white and fresh	16 @ —
California, select, irregular color & size	15 @ 15 1/2
California, good to choice store	14 @ 15
Eastern, as to section and grading	— @ —
Eastern, cold storage	10 @ 11

VEGETABLES.

Spring vegetables were in increased receipt, mostly from Los Angeles district, but there was no surfeit of choice to select. Quotable values for desirable qualities did not show any radical decline. Onion market continued in favor of sellers. The last Australian steamer brought 195 crates of Onions, which were intended for Honolulu, but the steamer was not allowed to land there. Most of these Australian Onions will be reshipped from here to Hawaiian Islands.

Asparagus, $\frac{1}{2}$ lb.	20 @ 30
Beans, String, $\frac{1}{2}$ lb.	10 @ 12 1/2
Cabbage, choice garden, $\frac{1}{2}$ 100	50 @ —
Cauliflower, $\frac{1}{2}$ dozen	50 @ —
Cucumbers, hothouse, $\frac{1}{2}$ doz.	2 00 @ 2 50
Egg Plant, $\frac{1}{2}$ lb.	10 @ 12 1/2
Garlic, $\frac{1}{2}$ lb.	5 @ —

Onions, Yellow, Cal., good to choice	1 75 @ 2 25
Onions, Oregon, $\frac{1}{2}$ cental	2 00 @ 2 40
Peas, Sweet, garden, $\frac{1}{2}$ lb.	3 @ 5
Peppers, Green Chile, $\frac{1}{2}$ lb.	4 @ 5
Peppers, Bell, $\frac{1}{2}$ lb.	— @ —
Rhubarb, $\frac{1}{2}$ lb.	— @ —
Squash, Marrowfat, $\frac{1}{2}$ ton	— @ —
Squash, Summer, $\frac{1}{2}$ box	75 @ 1 00
Tomatoes, Los Angeles, $\frac{1}{2}$ box	1 00 @ 1 50
Tomatoes, Bay, $\frac{1}{2}$ box	— @ —

POTATOES.

The market ruled steady most of the week under review for Burbank Seedlings, these receiving the bulk of attention for table use. Offerings were of fair magnitude and ample for the demand, but were lighter than early in the month. Inquiry for seed potatoes was sufficient to cause prices to rule firm for Peerless, Garnet Chile and Rose. Sweet potatoes were in a little better supply than previous week.

Burbanks, River, $\frac{1}{2}$ cental	65 @ 1 05
Burbanks, Bay counties, $\frac{1}{2}$ cental	— @ —
Burbanks, Humboldt	70 @ 1 10
Burbanks, Oregon	80 @ 1 15
River Reds	— @ —
Burbanks, Salinas, $\frac{1}{2}$ cental	— @ —
Early Rose	90 @ 1 05
Garnet Chile	90 @ 1 05
Peerless	1 20 @ 1 25
New Potatoes, $\frac{1}{2}$ lb.	2 @ 3
Sweet, River, $\frac{1}{2}$ cental	— @ —
Sweet Merced	1 85 @ 2 00

The Fruit Market.

FRESH FRUITS.

Apples were in lighter stock than at any previous date this season, and market for best qualities was firmer, especially for choice to select of Red varieties, desirable for displaying as table fruit. Some very fine Apples sold in a small way above quotations. Values for common qualities were without quotable improvement, although stocks of this sort showed material reduction. Strawberries were in fair receipt for this early date, but the quality was mostly quite ordinary, and it was the exception where what could be termed firm figures were realized. Sales were mainly within range of \$7@10 per chest for the large berry.

Apples, fancy, 4-tier box	1 50 @ 1 75
Apples, good to choice, $\frac{1}{2}$ 50-lb box	75 @ 1 25
Apples, common to fair, $\frac{1}{2}$ 50-lb box	25 @ 50

DRIED FRUITS.

To repeat last week's remarks concerning the market for cured and evaporated fruits would chronicle the situation at this writing about as well as a date of previous review. While the market is not wholly stagnant, it is far from being active, and jobbers are regretting the fact that they have the time and the goods for the filling of many more orders than they are being favored with. Great expectations have been and are still entertained of likely developments of the spring trade, but the spring season is rapidly approaching, and the prospective improvement in the demand fails to be realized in the slightest degree. Of course there is possibility for great changes in a few weeks or even a few days, but it would be much more comforting to have the desired change a reality instead of a possibility. Some assorted lots are moving outward and occasional straight carloads of Prunes and Peaches are being forwarded East. Quotable rates continue as previously noted, but market cannot be termed firm, the sustaining of values being more due to the staying qualities and financial strength of holders than to any positive strength in the situation from a supply and demand standpoint.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, $\frac{1}{2}$ lb.	10 1/2 @ 12
Apricots, Royal, fancy	12 1/2 @ 13
Apricots, Moorpark	13 @ 15
Apples, in 50-lb boxes, rings, pressed, fancy	7 1/2 @ —
Apples, 50-lb boxes, rings, pressed, good to choice	6 @ 7
Figs, White, fancy pressed	5 1/2 @ 5 1/2
Peaches, unpeeled, good to choice	6 @ 7
Peaches, unpeeled, fancy	7 1/2 @ 8
Peaches, peeled, in boxes	12 1/2 @ 15
Pears, unpeeled Bartlett's, halved, fancy	9 @ 10
Pears, halved, unpeeled Bartlett's	6 1/2 @ 8
Pears, quartered, unpeeled Bartlett's	6 1/2 @ 7 1/2
Plums, Black, pitted	6 1/2 @ 7 1/2
Plums, White and Red	7 @ 8

Prunes, in sacks 40—50s	4 @ 4 1/2
50—60s	3 1/2 @ 3 3/4
60—70s	3 1/4 @ 3 1/2
70—80s	3 1/4 @ —
80—90s	3 @ —
90—100s	2 1/2 @ —
110—130s	2 @ —
Prunes in boxes, 1/2 c higher for 25-lb boxes, 1/4 c higher for 50-lb boxes	— @ —
4 sizes Santa Claras and equal	2 1/2 @ —
4 sizes San Joaquin and Northern	2 1/4 @ 2 1/2
Prunes, Silver	4 @ 7

COMMON SUN-DRIED.

Apples, sliced	4 @ 5
Apples, quartered	4 @ 5
Figs, Black	— @ 3
Figs, White	3 @ 3 1/4
Peaches, unpeeled	5 @ 6

RAISINS.

Quotable values as fixed by the Growers' Association are unchanged. There are no large supplies in either first or jobbers' hands. Demand is exceedingly slow at present, however, and appears to be principally for seeded goods.

RAISINS.

F. O. B. FRESNO DELIVERY.

London Layers, 6-crown, $\frac{1}{2}$ box	— @ —
do do 5-crown, $\frac{1}{2}$ box	— @ —
do do 4-crown, $\frac{1}{2}$ box	— @ —
do do 3-crown, $\frac{1}{2}$ box	1 60 @ —
do do 2-crown, $\frac{1}{2}$ box	1 50 @ —
Valencia Layers, $\frac{1}{2}$ 20-lb box	80 @ 1 00
(Usual advance for fractions.)	
Loose Muscatel, 3-crown	6 1/4 @ —
Loose Muscatel, seedless	5 @ —
Pacifics.—2-crown loose Muscatel, 5 1/4 c; 3-crown, 6 c; 4-crown, 6 1/2 c; seedless, 4 1/2 c.	— @ —
Oriental.—2-crown loose Muscatel, 4 1/4 c; 3-crown, 5 1/4 c; 4-crown, 6 c.	— @ —

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, $\frac{1}{2}$ lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, $\frac{1}{2}$ lb., 8 1/2 c; choice, 7 1/2 c; standard, 6 1/2 c; prime, 5c. Unbleached, 5c.

Loose Valencia.—Fancy, $\frac{1}{2}$ lb., 5 1/2 c; choice, 4 1/2 c; standard, 3 1/2 c.

Valencia Clusters.—Fancy, $\frac{1}{2}$ lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Oranges of choice to select quality, Navels of high grade, met with a moderately firm market, slightly better than preceding week, but for the more common descriptions of Navels, and also for ordinary Seedlings, the market was without noteworthy improvement, either as regards general tone or prices obtainable. The cheaper grades of oranges were in very liberal supply. Lemon market continued to be well stocked, and although previous asking rates were unchanged, the demand was not active, nor was the market firm at the figures quoted. Market for Limes remained against buyers, under light supplies.

Oranges—Navels, $\frac{1}{2}$ box	1 25 @ 2 50
California Seedlings	60 @ 1 00
California Mandarin, $\frac{1}{2}$ small box	35 @ 50
Grape Fruit, $\frac{1}{2}$ box	— @ —
Lemons—California, select, $\frac{1}{2}$ box	2 25 @ 2 50
California, good to choice	1 75 @ 2 00
California common to fair	1 00 @ 1 50
Limes—Mexican, $\frac{1}{2}$ box	5 00 @ 5 50
California, small box	50 @ 1 25

NUTS.

Almonds, more particularly shelled, are in too large supply, as compared with the demand, for a healthy market at this date. Walnuts are dragging badly, with most of the present offerings more or less defective. Peanuts are in light supply and values rule steady.

California Almonds, shelled	15 @ 17
California Almonds, paper shell, $\frac{1}{2}$ lb.	10 @ 11
California Almonds, soft shell	8 @ 9
California Almonds, hard shell	5 @ 6
Walnuts, White, soft shell	10 @ 11
Walnuts, White, California, standard	9 @ 10
Chestnuts, California Italian	9 @ 10
Peanuts, California, fair to prime	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked	6 @ 6 1/2
Pine Nuts	5 @ 6

WINE.

The market for new wine shows steadiness, with movement light, neither buyers nor sellers being inclined to crowd business. Dry wines of the vintage of 1899 are quotable at 15@18c per gallon, delivered in San Francisco. Sales are reported up to 19c per gallon for new wine of superior quality, the realization of this figure being mostly on small lots. The Panama steamer sailing on the 9th inst. carried 19,028 gallons and 103 cases, including

11,828 gallons for Europe. Shipments of fair volume are being made Eastward by rail.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{2}$ sacks	152,827	3,692,388
Wheat, centals	303,176	3,208,071
Barley, centals	18,604	4,302,673
Oats, centals	4,605	508,373
Corn, centals	1,265	93,104
Rye, centals	655	88,730
Beans, sacks	2,715	315,212
Potatoes, sacks	19,420	850,274
Onions, sacks	1,379	127,928
Hay, tons	2,526	109,377
Wool, bales	51	35,687
Hops, bales	19	8,850

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{2}$ sacks	27,084	2,316,199
Wheat, centals	143,785	2,724,942
Barley, centals	74,783	3,350,338
Oats, centals	607	28,714
Corn, centals	80	11,927
Beans, sacks	311	19,498
Hay, bales	819	76,051
Wool, pounds	12,890	3,857,977
Hops, pounds	373	855,105
Honey, cases	—	3,253
Potatoes, packages	2,358	54,325

California Dried Fruit at New York.

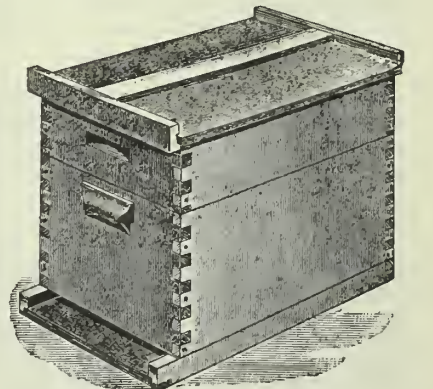
NEW YORK, Feb. 14.—California dried fruits: Steady, with fair inquiry. Evaporated apples, common, 5 1/4 @ 6c; prime wire tray, 6 1/4 @ 6 1/2 c; choice, 7 @ 7 1/2 c; fancy, 8 @ 8 1/2 c.

Prunes, 3 1/2 @ 6c.

Apricots, Royal, 13 @ 15c; Moorpark, 15 @ 18c.

Peaches, unpeeled, 7 1/2 @ 9c; peeled, 18 @ 22c.

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No Advance as YET in Our Prices.

100 No. 1 E, 1 1/2-Story, 8-Frame Hives at \$1.15;
50 at \$1.16; 25 at \$1.18; 10 for \$1.25;
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Front Axle with Hounds.
Any Size Wheels, Any Width.
Sizes, Regular 28 and 34-Inch, 4-Inch Tire.

20 @ 30
10 @ 12 1/2
50 @ —
50 @ —
2 00 @ 2 50
10 @ 12 1/2
5 @ —

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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING JAN. 30, 1900.
642,202.—AMALGAMATOR—J. L. Bradbury, S. F.
642,080.—ANIMAL EXTERMINATOR—F. Burman, Fortuna, Cal.
642,132.—TRACTION WHEEL—I. S. Kimbrell, Somis, Cal.
642,236.—CLASP—Fannie C. Larimer, Los Angeles, Cal.
642,243.—BEER FAUCET COOLER—Moran & Hoey, S. F.
642,474.—OVERSHOE—C. Moser, Fruitvale, Cal.
642,255.—TRAVELING CABLE GRIP—E. I. Parsons, S. F.
642,566.—SET SQUARE AND BEVEL—A. C. Smith, Los Angeles, Cal.
642,502.—SAWING MACHINE—Spencer & Neal, Sisson, Cal.
642,177.—FRUIT DRIER—E. Thompson, Pasadena, Cal.
32,172.—DESIGN—A. C. Ambruster, Los Angeles, Cal.
32,178.—DESIGN—W. W. Flewelling, Selma, Cal.
32,177.—DESIGN—M. Schichtl, North Yakima, Wash.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

BEER FAUCET COOLER.—J. Moran and R. P. Hoey of San Francisco, Cal. No. 642,243. Dated Jan. 30, 1900. The object of this invention is to provide a means for cooling beer and like liquids while they are being drawn from the cask or containing vessel. It consists of a segmental, double-walled refrigerating casing having holes made through it at points between the upper and lower walls, and in line with the hole into which the faucet has to be driven, so that the faucet passes through the enclosed space of the chamber, and in direct contact on all sides with the refrigerating material. Swinging plates fit over the holes and are adapted to enclose the faucet after it has been inserted, and means are provided for securing it against the head of the cask.

TRAVELING CABLE GRIP.—E. I. Parsons, San Francisco, Cal. No. 642,255. Dated Jan. 30, 1900. This invention consists of a grip which is especially applicable for aerial traveling ropeways, in which the load is suspended from trolleys traveling upon a stationary cable, and moved by means of a grip connected with the trolley frame and adapted to be closed upon a traveling cable. The device consists of a slidable hanger guided by the framework of the supporting trolleys, a fixed gripping jaw carried by the hanger, a movable jaw carrying the screw-threaded nut, a screw journaled and turnable through the nut, and a rocker arm connected with the screw shaft, connections being made between the rocker arm and the sliding body and a traction cable which is adapted to be locked between these jaws. In conjunction with this are fixed rails at points where the rollers may be received, so as to transfer the weight of the load from the main supporting cable at points where the apparatus is to stop for any purpose.

The McCormick

"The Best in the World."

Industrial Notes.

—Nearly 2000 men are at work on the coast railroad line at Gaviota and Santa Barbara, Cal.

—A German publication states that the Philippine islands are among the few places where gutta percha trees will flourish, and suggests the cultivation of the trees as an opportunity for American enterprise.

—The Dawson City Water Works, over the hydrant of each customer, who pays \$1 per week for the service, erects a wooden house measuring 6 feet in all three dimensions, each of which contains a stove in which the company keeps a constant fire.

—The Division of Forestry will continue the investigation of Pacific coast timber begun last summer, and several parties will start in June for the redwood belt of California and the fir forests of Washington. The object is to compare the reproduction with the present depletion and to investigate the possibility of reforesting logged-off lands. There will be from fifteen to twenty-five men in each State.

—Much attention is being given at present to timber lands. Lumber companies are paying good prices for stumpage and a large amount of capital is looking for good timber within reasonable haulage distances. Timber claims are being hunted up in Oregon and Washington particularly, and many mineral prospectors have utilized their time during the snowy months of the winter in a search for good timber.

—American commerce with the islands and countries of the Pacific shows a greater gain in the year 1899 than that with any other part of the world. Our total exports increased \$20,000,000, and our exports to Asia and Oceania alone increased over \$19,000,000. Our total imports increased \$164,000,000, and \$48,000,000 of this increase was from Asia and Oceania. Exports to Asia and Oceania increased 27%, while imports from that part of the world increased 40%. Of this increase of \$20,000,000 in exports to Asia and Oceania, over \$6,000,000 went to British Australasia, \$4,000,000 to the Hawaiian Islands, \$4,000,000 to China, and the remainder distributed to the various countries and islands of that part of the Western Pacific, while of the imports from Asia and Oceania \$12,000,000 were from the Dutch East Indies, \$11,000,000 from Japan, \$9,000,000 from the British East Indies, \$7,000,000 from China, and \$6,000,000 from Hawaii.

—The Oakland, Cal., Enquirer notes the considerable income or earning capacity of a Pullman car. Every road in the United States pays 3 cents per mile for the privilege of hauling a Pullman car, and contracts to return it in as good a shape as it was received and to pay for all damages. The journey on the Owl train from the Oakland mole to Los Angeles, Cal., is 428 miles. On this there are generally two Pullman sleepers. The money paid, therefore, for the use of the two cars for one trip to Los Angeles is \$25.68. If the cars are full, as is generally the case, the receipts from berths, sections and staterooms amounts to \$185 per car or \$370 for the two cars, making a total revenue of \$395.68 per day. Out of this must come the wages of the porter and conductor, the cost of towels, sheets, soap, etc., the whole amounting to but a small sum, considering the revenue. Then there is the wear and tear and general depreciation, the daily refitting and repairing. Set these charges down at 10%, and give the car but five trips per week to Los Angeles, then the earning would be \$46,294.56 per year.

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Above 10 Pkgs. worth \$1.00, we will mail you free, together with our great Catalog, telling all about

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upon receipt of this notice & 14c. stamps. We invite your trade, and know when you once try Sauer's seeds you will never do without.

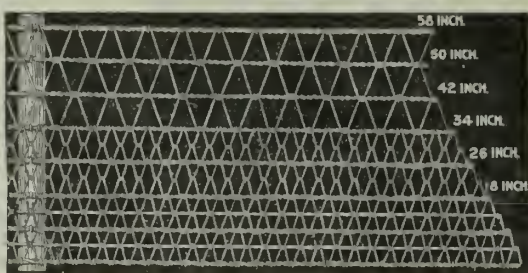
\$200 Prizes on Sauer's 1900—fastest earliest Tomato Giant on earth. P. 9

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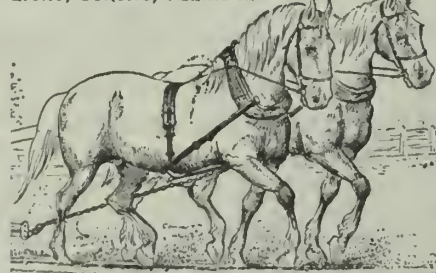
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It works thousands of cures annually. Endorsements like the above are a guarantee of merit. Price, \$1; six for \$5. As a liniment for family use it has no equal. Ask your druggist for KENDALL'S SPAVIN CURE, also "A Treatise on the Horse," the book free, or address
DR. R. J. KENDALL CO. ENOSBURG FALLS, VT.

Patrons of Husbandry.

From the Worthy Master.

TO THE EDITOR:—Something to read at our Grange meetings, printed in the Grange column of the PRESS, is called for.

"What is the Crying Need of the Order?" has been suggested as a topic for discussion. I answer, Co-operation. Mrs. F. D. Saunders, Lecturer Michigan State Grange, says:

Too many Patrons apply the meaning of co-operation as only taking advantage of the trade contracts by sharing in the pecuniary benefits of the Order, but the broader meaning of the word co-operation is to co-operate in all the features of the Grange work, hence the lecture work. We hear much in these days of the men behind the guns who discharge their duties with a promptness and intelligence that win the commendation of their leaders. In this great Order the rank and file are the men behind the guns, and the success of the lecture hour depends upon the willingness to act when the invitation is given them. As the lecturer has not the power of the general to command, he can only ask their earnest co-operation. But, of the great army of farmers, how few there are who are really doing their very best for the good of the Order? Perhaps the inspiration to do one's best is not so great as if one was defending the flag; but to improve and elevate the condition of the American farmer is a task worthy the labor of any one—an ambition noble enough to inspire the best that is in us, a platform broad and comprehensive enough for all parties to stand upon, and a creed upon which all good people everywhere might well unite.

We all like to see the Order prosper, but far too many of us think we have no personal work to do to make it prosper. We attend the meetings when it suits our convenience to do so, not when the lecturer has assigned us work on the programme. When we do attend we are inclined to regard ourselves as guests and look for entertainment from others rather than do all in our power to make that meeting the best in the history of the Grange.

It is expected of the lecturer to prepare the programme, but not to carry it out. Would that all members of the Order would realize that they are under obligation to aid the lecturer in his work; that to ask to be excused when work is given them is placing a barrier across their own pathway; that every effort made to help in the lecture work will be helping themselves to a little higher plane of thought, for it is by repeated efforts that we grow in mental stature. Every member can and should give his best thought upon a subject under discussion when called upon by the lecturer. Thoughts shut up will mold for want of air; let those brothers and sisters who have never tried to talk in Grange just air their thoughts.

It is said at the beginning of the year is the proper time for new resolutions. Then let every Patron resolve upon three things: First, attend every meeting of their Grange for this year; second, be on time, not a half hour late; third, aid in the work of the lecture hour.

Read the Grange Bulletin. The secretary of each Grange can send for it for the Grange and a copy can be in the hands of the lecturer for his use. Let

each officer study the installation service and learn his duty and then do it. Indifference is the great foe to healthy growth; it is the opposite of that spirit of helpfulness which should animate each member of our Order.

G. W. WORTHEN.

Tulare Grange.

TO THE EDITOR:—In addition to proceedings reported in last week's PACIFIC RURAL PRESS, Sisters Berry and Fleming read papers—both very good—on "What Will Improve Woman's Social Condition at Home and on the Farm?"

Bro. Thos. Jacob of the California Canned Fruit Association made a report which was listened to with interest, and resolutions were adopted approving and recommending the organization. Bro. Jacobs distributed copies of the articles of organization and of the contracts to be signed; both met with approval.

The Worthy Master reported attending Farmers' Institutes at Dinuta and Porterville, both well attended and both desirous of having classes formed for a course of home reading in agriculture. At Porterville resolutions were passed approving the wide-tire law and protesting against its repeal.

A letter from Prof. D. S. Fowler, Conductor of Farmers' Institutes, to the Worthy Master was read, saying he can conduct an Institute in Tulare on March 30th and 31st. The Worthy Master was requested to notify Prof. Fowler that Tulare Grange will co-operate with him in holding an Institute on those days. A committee of three was appointed to make further arrangements.

Bro. Forrer reported that in November there were nine days all cloudy, only one fair day in December, the rest cloudy or rainy, and twenty-two days cloudy all day and nine days partly cloudy and fair in January.

Two Brothers and one Sister were requested to prepare and read at our next meeting papers on "How Shall We Advertise Our Grange and Its Benefits to Farmers?"

Senator Geo. C. Perkins, having sent the Grange a supply of assorted garden seeds, all who desired to do so took home what they needed for their own use.

Sister Berry read a clipping defining the farm and the ranch.

There was no lull or dull time at the meeting, one interesting subject followed another from opening to closing.
J. T.

STATE OF OHIO, CITY OF TOLEDO, ss.
LUCAS COUNTY,

FRANK J. CHEYNEY makes oath that he is the senior partner of the firm of F. J. CHEYNEY & Co., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of CATARRH that cannot be cured by the use of HALL'S CATARRH CURE.

Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1898.

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Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

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Hall's Family Pills are the best.

THE Iron Age Catalogue, issued by the Bateman Manufacturing Co., Greenloach, New Jersey, gives good illustrated description of farming tools and of a fine line of wheel hoes and seed drills, cheap, durable and efficient. They will send the descriptive catalogue to any one asking for it. A postal card will bring it.

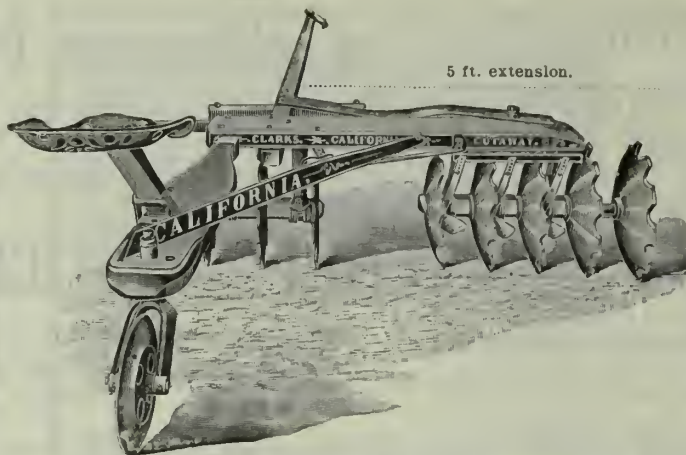


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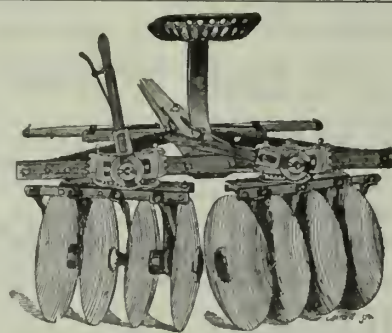
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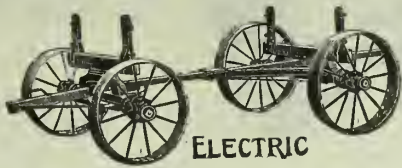
Gunning for Hail.

Prof. E. W. Hilgard gives Science a note on the prevention of hail which promises great things in regions where hailstorms abound. But little notice has been taken in the United States of the remarkable progress made in northern Italy in the establishment of stations for the protection against injury from hailstorms, by means of the Wetterschiessen—one of the old "superstitions" which has come to honor again in our enlightened age. Shooting and ringing of church bells has for ages been popularly supposed to be efficacious against the effects of thunderstorms, especially of lightning. But the belief found no scientific support, and statistics seemed to prove that the rains supposed to follow the heavy cannonading of great battles are, like the weather changes following those of the moon, quite as much the exception as the rule. Now, however, the matter has taken the practical shape, in the form of stations located at intervals of not more than a kilometer apart in regions subject to hailstorms, and provided with a small cannon placed vertically and surmounted by a 6-foot, narrow conical trumpet, which transmits the vortex and concussion of a 3-ounce charge of black powder to the threatening cloud, preventing the formation of hail, and apparently also diminishing the electrical discharges. The idea originated with Burgomeister Moritz Stigel, of Styria, where after three years' experience complete exemption from hail injury seems to have been secured, so that the inhabitants have abandoned hail insurance, finding the new method cheaper.

In the last semi-annual volume of Proceedings of the Academy of Georgifili, Florence, the subject is once more extensively discussed. A new style of breech-loading rapid-fire gun has been substituted for the original Stigel pattern, and 800 of these anti-hail stations have been and are being established in the region of Brescia, for the protection of vineyards. Small bombs with time fuses have been added to the equipment, and it is stated that the vortex, outlined by means of the dust, reaches the height of two kilometers, and that its low, whistling noise is heard from fourteen to seventeen seconds after the discharge.

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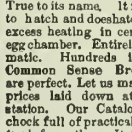
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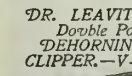
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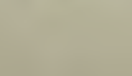
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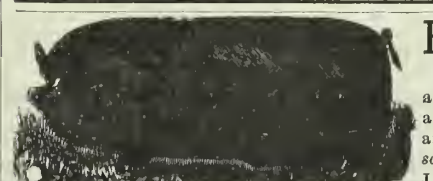
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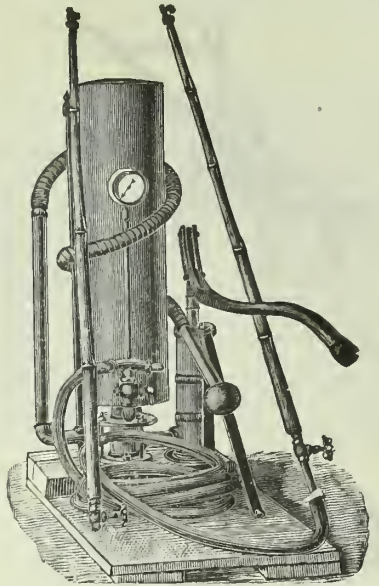
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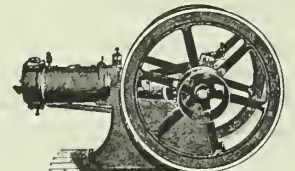


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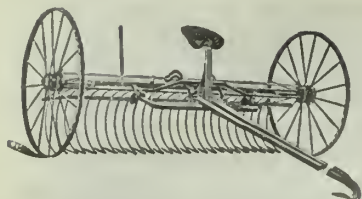
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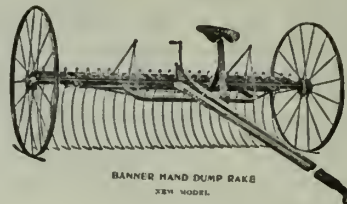
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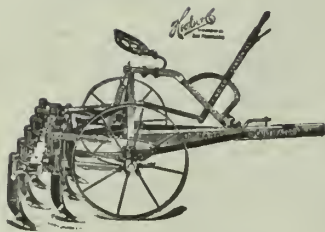
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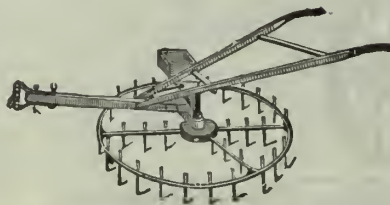
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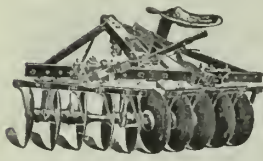
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WITH OR WITHOUT LEVER



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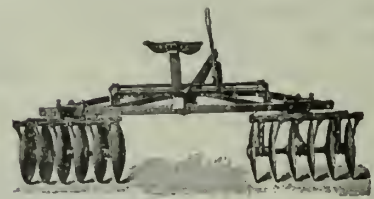
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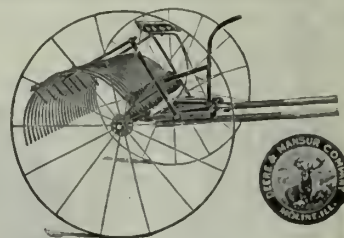
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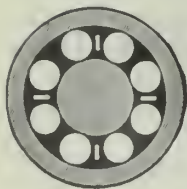
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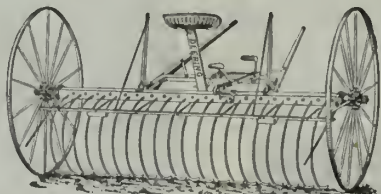
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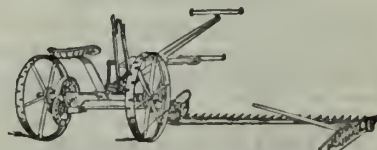
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Vol. LIX. No. 8.

SAN FRANCISCO, SATURDAY, FEBRUARY 24, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

In the California Mountains.

We pass out for the present from the consideration of the picturesque in the California uplands with a glance at some uplifts which are quite different from those previously shown, and yet quite within the infinite variety which constitutes the topography of California. We have had foothill rocks verdure clad and nooks adorned by colors of bloom and foliage, but there are vast areas of the State which are almost forsaken by trees or have been denuded by sweeping fires, and presented to the beholder only the strange figures of their outlines or the colors of the rocks or minerals which compose them. Even these characters are, however, of the keenest interest to nature-lovers, and the plays of light and shade give them irresistible charm. This is true of the hills and mountains which lie on the



Mt. Cayetana as Seen from the Sespe Valley in Ventura County.

ment in the southern part of the State. Such strong sentiment is now being fostered toward this end that we believe many undertakings in this line will be realized sooner than most people think.

The lower picture shows a different type of foothill scenery, which is fairly characteristic of the region east of the

transformed into orchards where water has been led over them, but tens of thousands remain, serving a present purpose as pasture lands and standing as a great possibility of the future.

U. S. CONSUL SKINNER, at Marseilles, reports to the State Depart-

demand will steadily increase. In 1898 the importations had increased to 4,473,200 pounds from Spain, 4,529,900 pounds from Algeria and 399,000 pounds from all other countries. These facts are especially interesting, because there is a disposition in California to increase plantings along this line.



Hill and Mountain Ranges West of Piru Creek in Ventura County.

west side of the desert and canyons traversed by the railway between Mojave and Los Angeles. Westerly from Saugus there is a collection of elevations which always claim special attention from tourists, and of them two views are given in the photo plates upon this page. They are oil-bearing territory, and the lights at various elevations give them a weird appearance during the night. To one who happens at Saugus at sunrise or sunset the colors upon the bare mountains are indescribably beautiful. Perhaps to those who have had only the distant view thus indicated the fuller details which our views afford may be acceptable. From their southerly sides one looks down upon the wide, fertile valleys of Ventura county, stretching from the base of the range to the beach of the broad Pacific. From their sides, also, waters flow to supply the streams of the fertile coast side. As the pictures indicate, this flow is all too sudden now for the best interest of the valley, and the floods have wrought wide havoc with the valley lands. The time will come, however, when these slopes will be reforested and will act as great conservators of moisture to feed the streams during a long season. The utilization of reservoir sites, also, amid such mountains as the pictures show, will be the means of future develop-

San Joaquin and Sacramento valleys. In the settlement in the foreground the intrusion of the poplars is noticeable, but most of the vegetation aside from them is native to the spot. Hundreds of miles of such hills are strung along the west flank of the Sierra Nevada range. Thousands of acres have been

ment a rapidly developing demand for Mandarin oranges throughout Europe. The sources of supply are Algeria and Spain. The trees are grown with some success even in France, as far north as Nice, but the quality is not equal to that of the Spanish and Algerian fruit. It is thought that the present

THERE is complaint that the alfalfa seed from Utah is poor and only one car of choice seed has been received this year. There is little seed now in stock here, and dealers say there is an opening for good, clean seed at 6 to 7 cents. This seems pretty low to stimulate production; but, if there is any money in it, California growers ought to have it. Good seed ought to be worth more money.

EFFORTS to advance Alaskan agriculture are proceeding at Washington. One day last week Governor Brady, of Alaska, addressed the Senate committee on farming operations in that territory. He advocated legislation which would allow men to acquire title to lands so that they could open up farms; also the continuance of agricultural experiments which had been made by the Government.



Carson Hill as Seen from Robinson's Ferry in Calaveras County.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, February 24, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Mt. Cayetana as Seen from the Sespe Valley in Ventura County; Hill and Mountain Ranges West of Piru Creek in Ventura County; Carson Hill as Seen from Robinson's Ferry in Calaveras County, 113.
EDITORIAL.—In the California Mountains, 113. The Week; Miscellaneous, 113-114.
QUERIES AND REPLIES.—Notes on Nuts; Ginseng in California; Canalgre; The Yak; Moles in Lawns; Apricot on Prune; Spray for Apricot Crops, 115.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending February 19, 1900, 115.
THE IRRIGATOR.—The Economic Use of Water; The Census and Irrigation Interests, 116.
THE FIELD.—How to Maintain Fertility, 116.
THE SWINE YARD.—Care and Management of Swine, 117.
THE SUGAR BEET.—Feeding Value of Beet Tops and Beet Pulp, 117.
FLORIST AND GARDENER.—Roses for Southern California, 118.
THE VETERINARIAN.—Answers by Dr. Creely—Treatment for a Horse; A Case of Barley Beards, 118.
AGRICULTURAL REVIEW.—119.
THE HOME CIRCLE.—In Aegina; Winter Moonlight; The Lost Bracelet; Ten Fine Poems; February; Acquiring a Competence, 121. Country-Bred vs. City Bred Boys; Hot Water as a Remedy; Women's Most Winsome Age, 121.
DOMESTIC ECONOMY.—Hints to Housekeepers, 121.
THE MARKETS.—Produce Market; Fruit Markets, 122-123.
PATRONS OF HUSBANDRY.—State Lecturer's Topics, 126.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 124. Brewers' Grains Corn-cake, 127.

The Week.

As we go to press on Tuesday, a very wet storm is covering the regions north of the Tehachapi mountains, but it has not yet disclosed behavior to accomplish its southern extension, though that may come later. The water is very welcome everywhere, for the drying winds had put the surface into need of softening. We are having a very favorable season so far in the matter of frost, and this melting weather is the best guarantee of mildness to come. It is reported that Florida is having another tussle this year with low temperatures. There was a mild January, which encouraged growth, followed by a nipping February, the mercury at Jacksonville on Feb. 18th dropping to 16½°, and it is said that hundreds of groves have been protected by tall fences or rough sheds erected over and around them, numerous cheap, cast-iron stoves being used to keep warmth in the groves. A Philadelphia millionaire who has five groves built regular houses around and over his trees at a great outlay. Fortunately, California has only done that on a very small scale so far. The occurrence of the Citrus Fair at Cloverdale this week shows what can be done in this State even 100 miles north of San Francisco.

How great the California fruit and vegetable canning interest has become is seen by the figures reported at the annual meeting of the California Fruit Canners' Association in this city the other day. The secretary's report was that they had paid out in California \$1,500,000 for fruit and vegetables last year and expended for labor, outside of salaries, \$775,000. Other figures of interest were supplied by the annual report of the secretary, Isaac H. Morse. The assets amount to \$3,625,000 in round figures. The sum of \$1,905,000 is in plants and real estate, good will and shares of the Southern California Packing Company. The inventory, at cost, showed a value of \$1,042,207.17. The capital stock is \$2,755,000. There are twenty-three plants in operation, distributed as follows: San Francisco three, Santa Clara valley two, Alameda county three, Sacramento valley six, San Joaquin valley four, southern California four, Sonoma county one. Other plants will be added, among them a large plant at Stockton. This report is not complete, for there are canneries outside of the combination, but we do not know how many.

There is quite a little rush in shipping wheat, to get the property out of sight of the assessor before March 1. Unless Neptune makes his levy on the cargoes, the owners will count themselves ahead.

Spot wheat is unchanged, because there is no pressure to sell. Futures are lower, on the basis of the rain and lower prices at the East. Other grains are quiet, but steadily held. Hay is weakened by the rain, but it is so low that it is hard to hurt it much. First quality beef is in large supply, and lower grades are selling close to it. Mutton is unchanged but easier, while hogs are in light receipts and good demand. Young chickens are higher, while turkeys are depressed. Eggs are still dropping and butter sliding down. Cheese is weak, but liable to be stiffened by outside demand. Oranges are in larger supply and weaker, but a better demand prevents decline. Prunes are in request this week. Potatoes and onions are easier, with large supplies from Oregon, but there is no change. Beans are steady. There has come a spurt in alfalfa seed since the paragraph on the previous page was printed and the quotation has gone to 9c., but dealers protest against it. The reader has the fact, however, even if it be not durable. The demand for spring sowing is sharp and supplies are scant.

There is to be a convention of cattlemen in this city on March 5 to promote the proposition now before Congress for leasing the public grazing lands for pasturage purposes, for terms of ten years, with the right of renewals, thus giving the cattlemen the control of his range for a number of years. It is expected, so the circular says, that in ten years the ranges may be restored to their primitive condition of productiveness in forage and that the beef food supply will then keep pace with the increase in population, and the Government will have in the restored ranges a very valuable property. Secretary Wilson foresees the approaching end of the grazing business and a vital blow at the country's beef supply unless the ranges are put under such possession and control as will give stockmen an interest in the renewal of their grasses by making a profit therein. It is announced that those now owning stock on the ranges will be given preference in the issuance of leases if they desire them. This matter has been opposed by those urging forest preservation because they believe it will prevent the exclusion of grazing animals from the forests but we do not understand that that follows. The grazing lands are not the forest lands in the understanding of the Government.

California is going to do a large foreign meat business to tropical Pacific countries if we are not very much mistaken. There may also be much trade in this line in China and Japan, for all these countries are shy in the animal industry, and the Orient cannot proceed on a rice diet in competition with the Occident which is nourished with a balanced ration. Therefore what is done in shipping frozen meat is of prospective interest to our growers and slaughterers. See how much frozen meat Great Britain is receiving. According to figures just to hand, via the Mark Lane Express, the imports of live cattle were decidedly light last year, while the imports of frozen beef carcasses were increased, the receipts aggregating 2,847,034 cwt. or 523,535 cwt. in advance of the heaviest year previously recorded. Since the trade commenced, every year, except 1892, has established a fresh record as regards the aggregate of carcasses of mutton and lamb imported from the various sources of supply. The year 1899 proved no exception to the general rule, the 6,869,419 carcasses landed in the ports of the United Kingdom being 439,328 in advance of 1898. The 1899 import of frozen mutton and lamb represents 27% of all the mutton and lamb available for consumption in the British isles, or fully 8½ pounds per head of the population. What would it not do for California if we could serve the Chinese empire at that rate!

Rational progress with bovine tuberculosis is being attained in New York State. The Legislature now in session appointed a committee of investigation, which has just reported. It recommends a change, and would place the inspection of cattle for tuberculosis and of horses for glanders with the Commissioner of Agriculture. It suggests that the Commissioner appoint a farmer who understands cattle as appraiser, who shall fix a value for condemned cattle. The State, according to the committee, should only force the slaughter of cattle that are condemned by physical examination. A farmer may,

however, agree to have his herd tested with tuberculin if he desires—to slaughter or quarantine all that respond. For all such slaughtered cattle that have been owned in the State for one year, the State shall pay half the appraised value for cattle found to be tuberculous and full value for those not actually diseased. In brief, these are the suggestions made by the committee. They seem to the Rural New Yorker to be reasonable and sensible and we concur.

So, after all, our raisin industry is to be embarrassed for a time at least, because the great New York Circuit Court of Appeals has reversed the decision of our Judge Morrow and decided the Zante currant case on a geographical quibble. The tariff law provides an impost upon "raisins and other dried grapes, including Zante currants." The court decided that, as the so-called Zante currants do not come from Zante, but from adjacent islands, they are therefore duty free. The result is that the decision practically nullifies the duty on so-called Zante currants and permits such dried currants to enter this country free of duty in competition with the raisin products of California. There is nothing more to be done with the courts, it is said, and the California raisin grower will have to go to Congress to bring all dried grapes of whatever size or from whatever island under the same clause, which is where they belong. The wily importers have scored one on their knowledge of geography, and the court decides that when it includes Zante currants it intended to exclude all other currants. Oh, how wise!

It is announced in the Paris newspapers of January 9 that Prof. Lassere of the district of Puntous, Hautes Pyrenees, has discovered a cure for phylloxera, which is common chimney soot, applied in the winter time. A quart and a half of soot is buried at the foot of each vine, and the rains and melted snow take the substance of the soot to the deepest extremity of the roots. The vine is at once regenerated, the soot being not only an insecticide but also a fertilizer of great value. The soot should be applied only in winter. It destroys the phylloxera with great rapidity. We have no doubt but soot will kill all the insects it reaches, but how to distribute it to the outermost rootlets is the proposition. It seems incredible that such a common insecticide as soot, which is known to all European gardeners, should appear now in this role, but we give the announcement just as it comes. It will be easy enough to try it.

The Legislature repealed the wide tire law at its recent session, and this leaves the whole question as it was before the effort was made for road preservation by this means. It will be in order now to look more carefully into the matter and see if there are not ways in which the principle can be applied with advantage, for everything has to be done over again. The wheelmen seem to have abandoned their campaign of education, with the idea that California ignorance on this subject is too dense for such electric drills as they have at command. Our agricultural societies can do much with it if they can assure themselves just where the truth lies and to what extent such an enactment is desirable.

The California Cured Fruit Association's progress is satisfactory, and much is being accomplished in its promotion each day. Last Saturday, at San Jose, an agreement was had with the State Fruit Packers' Convention covering apricots, peaches and pears, so that now all the leading fruits are provided for. Contracts are being freely signed. It is stated that 95% of the Mountain View growers have signed, and this rate has been met, if not surpassed, by the growers of Campbell and Moreland. This shows how solidly the Santa Clara valley is going in; and outside districts are advancing also.

The lectures to fruit growers at Stanford are in progress this week and a good many are in attendance. Dr. Jordan says they can have them every year, if they care enough for them.

Sunol, the famous mare which made 2:08½ to a high sulky in 1886, was sold in New York on Feb. 15 for \$4000. Robert Bonner bought her for \$41,000.

QUERIES AND REPLIES.

Notes on Nuts.

TO THE EDITOR:—On what stock can I graft the English filbert? I have several old plants, but the climate does not suit them, and I propose to find a better. They are too old to move. How can I get smaller plants which can be planted in a better place? I have pecan trees twenty years old; they never bear, though they blossom every year. Two hickories behave in the same way. Can you tell what is the reason? Does the American sweet chestnut do well in Santa Clara county? I feel inclined to plant a lot of them in the hills west of the valley, but I have had such success in growing nut trees which give leaves and no nuts, that I am shy of further experiments.—READER, Santa Clara county.

We do not know of any stock that would be available for the English filbert, except our own wild species, the *Corylus rostrata*, or beaked hazel, which grows freely in the Coast Range mountains. Grafts will readily take on this. You could propagate your plants by suckers, if there are any, or by layering branches.

The pecan tree seems to be a snare and a delusion, so far as fruit goes in the whole bay region, as our climate is so equable that the tree loses track of times and seasons, and either bears not at all or else holds on to its fruit endlessly without ripening. It seems doubtful if anything can be done with the pecan except by planting in the interior valleys, where the temperature extremes are more marked. The trees bear on General Bidwell's place in Chico, and we have seen the nuts grow at other interior points.

There are a few of the American sweet chestnuts produced in California, chiefly in the foothills of the Sierra Nevada, but we know of no reason why they would not bear in suitable places on the Coast Range. Nearly all chestnuts, as grown in California, seem to go through a long period of making empty burrs, but, after acquiring age, they seem to settle down to better bearing habits. In experimenting with chestnuts, however, it is better to use the Marrons of Spain and France. They are larger than the American chestnut, quite as sweet, with a very thin inner skin devoid of bitterness and generally very desirable. They are not at all like the coarse Italian and Japanese nuts. If you wish full information about the Marrons, you can get it from Felix Gillet, Nevada City, who is an enthusiast on this subject and has large bearing trees on his place. There was a very interesting article from his pen in the PACIFIC RURAL PRESS of Dec. 23rd last.

Ginseng in California.

TO THE EDITOR:—Has ginseng been grown in California? Will it grow well in this locality with or without irrigation? What effect does frost have on it, and can the plants and seeds be obtained in this State? Generally speaking, would you advise me to attempt to raise it for the market? Of course, unless there is a demand for it I would not care to experiment with it.—SUBSCRIBER, Stockton.

There seems to be a good prospective demand for this medicinal root—dear to the Asiatic—and systematic effort for its production under cultivation is being made at the East. We apprehend that few if any regions of California will be found suited to the plant. It grows naturally in moist ground in Eastern forests, and quickly disappears in clearings. We believe that it will not endure either the dry soil or the dry summer air of California. It is possible that we have moist soils, composed of vegetable mold, where artificial shade could be afforded and where summer heat is always moderate, as is the case in some of the bottom lands of the interior rivers. Similar conditions might be found in the upper coast region. There is, however, so much still to be determined about it that it is not to be thought of as a crop until demonstration is had. We are not aware that seeds or roots can be obtained in this State.

Canaigre.

TO THE EDITOR:—I send a kind of dock which grows on our ranch. Is it the kind which is used for tanning purposes? If so, is it a profitable crop to grow on light, sandy soil, where there is plenty of water for irrigation?—M. H., Monterey county.

It is the true canaigre (*Rumex hymenosepalus*). There is no difficulty about growing the crop on such soil as you mention, even without irrigation, and a larger crop with irrigation. It is, however, still a question as to the profitable marketing at the pres-

ent time. There is considerable area already planted in California and in the Territories of Arizona and New Mexico, and we should prefer to wait until it is more clearly shown what has to be undertaken in the way of preparation for profitable export before we would base our livelihood upon it. We would like to have the experience of readers on this point.

The Yak.

TO THE EDITOR:—Has the yak ever been used in crossing with our breeds of cattle to secure hardiness in the northwest, where so many animals are lost by severe storms?—READER, Hyde Park, Los Angeles county.

We have never heard of the introduction of the yak. It has been demonstrated abroad that this species of bos crosses readily with the bos bovis, which is the species to which our domesticated breeds belong. There have been good crosses in this country with the buffalo and the sacred ox of India, and possibly the yak has also been used, but we have not heard of it. The yak is probably the most hardy of the bos genus, and is covered with a growth of long hair which falls from his sides almost like a curtain to enclose his limbs and keep him from having cold feet, even in the blizzards which sweep over the central plateaux of Asia. It seems reasonable that these endowments might prove of value to our blizzard country, but California is hardly the place where this sort of a thing would be likely to be worked out.

Moles in Lawns.

TO THE EDITOR:—How do you get rid of moles in lawns?—T. L. WILSON, Olema.

Our own method is to open the hole, insert the nose of a "squirrel smoker" in which we have made a fire of damp straw sprinkled with sulphur, and work the bellows very lively for a few minutes. This fills the burrow with a dense sulphurous smoke under pressure, which forces it out wherever there is an escape, though it be rods away. We have never known whether we have killed any moles by this method, but we have sometimes secured months of freedom and have credited the reappearance to new moles. The only way we know of to be sure you have the mole is to use the mole traps sold at the seed stores. After a little practise in setting these traps you will be pretty sure to make a catch. On loose ground we catch the mole by throwing him out with a shovel when he is working near the surface.

Apricot on Prune.

TO THE EDITOR:—Can I successfully graft the apricot on the prune trees which do not bear?—READER, Riverside.

The apricot will grow on the plum stock, but the result is not usually satisfactory, as the plum stock seems to restrict the growth of the apricot. It might be better to have a few apricots than no prunes, but we doubt the result as commercially satisfactory. We would prefer to take a risk with Japanese plums on non-bearing prune trees at the south.

Spray for Apricot Scale.

TO THE EDITOR:—What is the best spray for scale on the apricot?—GROWER, Sacramento county.

Correspondents should always send a specimen, unless they can tell what scale they have to deal with. So far as we know the scale is one of the lecaniums, and kerosene emulsion is the best spray, and can be safely used even if the buds are starting.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, February 20, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka.....	.84	35.72	18.77	28.79	40	62
Red Bluff.....	.68	15.77	13.13	17.58	38	70
Sacramento.....	.08	13.79	7.85	13.51	38	64
San Francisco.....	.36	14.93	7.77	15.86	45	62
Fresno.....	.06	6.23	3.86	5.92	36	74
Independence.....	.04	2.12	1.15	4.38	32	66
San Luis Obispo.....	.16	12.57	7.15	13.23	34	76
Los Angeles.....	.00	4.57	2.96	11.74	42	82
San Diego.....	.00	2.64	3.75	6.67	46	74
Yuma.....	.00	0.75	1.34	2.42	42	80

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 19, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

The temperature for the week has been considerably above the normal, and conditions have been favorable for farm work, as but light showers have fallen in portions of the San Joaquin and Sacramento valleys and in the coast and bay sections. Frosts have been frequent throughout the State, but were too light to injure early fruits. Great progress has been made in plowing, seeding and cultivating. In some localities plowing and seeding are completed for the season. There has been a large acreage of grain planted, and with favorable conditions during the spring and early summer it is probable the yield of wheat, barley and oats will exceed that of last season.

In the central and northern portions of the State grain continues thrifty, but would be benefited by rain. In southern California and some portions of the middle and southern coast counties, much grain has turned yellow, and unless rain falls within a few days it is feared great loss will ensue.

Almonds are in full bloom in nearly all parts of the State, and apricots, peaches and Japanese prunes are advancing rapidly. A large yield of all varieties of deciduous fruits is predicted, if not injured by frost. Citrus fruit trees continue in good condition.

Pasturage is excellent in the central and northern sections, but is scarce in the south, and greatly in need of rain.

SACRAMENTO VALLEY.

Conditions have been remarkably favorable for farm work during the week, with temperature generally above the normal, clear weather, and only light showers in localities toward the close of the week. Plowing and seeding have progressed rapidly, the ground being in excellent condition. In El Dorado county farmers and miners complain of the scarcity of water and the springs are said to be very low, but all other sections appear to be in condition to withstand dry weather for a considerable time. In Tehama county some farmers state that their grain is growing so rank that they intend to mow it, in the hope of preventing too heavy a growth of stalk when matured. The ample rainfall, with following days of sunshine and warmth, have not only caused an abundance of grass, but an overabundance in the growing of grain, and if the stalk continues to grow it is feared many of the fields will be lodged before the grain is matured, causing the heads to rot. Fruit prospects continue good. Almonds are in full bloom. In portions of Yolo county apricot trees are making a poor showing and would probably be benefited by rain. Light frosts caused no damage.

SAN JOAQUIN VALLEY.

The weather has been generally clear, with pleasant days and cool nights. Light frosts are reported from all portions of the valley, but no damage resulted. North winds are reported in the northern portion of the valley, drying out the soil to a certain extent. Crops of all kinds are looking well and, while not suffering from lack of moisture, need rain. Seeding is still progressing on the black lands in some localities. There is a large acreage of volunteer grain, which with a favorable spring will make a good crop. Farmers are busy plowing summer-fallow. Pruning is about completed. Fruit trees are looking well; buds are swelling in some localities. Almonds are in full bloom in the central portion of the valley. Light rain fell quite generally over the valley Sunday and Sunday night, but was too light to do much good. The shipment of sheep and lambs to market is getting quite general. The farmers on the sandy soils and in the foothills say they never had better prospects, and that they have seeded all the land they intended, while on the black lands some seeding was prevented by the early rains making the ground too soft to work. With seasonable weather from now on the prospects are favorable for fine crops of both grain and fruit.

COAST AND BAY SECTIONS.

The temperature has been considerably above the normal during the week and the weather has been mostly clear and sunny. Light showers fell in some sections towards the close of the week, but the precipitation was not sufficient to materially benefit crops. Rain is needed in nearly all parts of the section, and especially in the southern counties, where grain would be greatly benefited by good heavy showers. The drought has not yet caused any damage, but in some localities grain is near the danger line. Food continues abundant. Some farmers are engaged in plowing and seeding, and orchardists are pruning and cultivating. Potato planting has commenced. Apricots are in bloom, and peaches and Japanese plums are beginning to blossom. Frosts have occurred in some sections during the week, but were too light to injure early fruits. In the vicinity of Santa Rosa it is reported that the season is about two weeks later than usual, and consequently fruit prospects are much better. All sections report that deciduous fruit trees are heavily laden with buds and blossoms, with good prospects for large crops.

SOUTHERN CALIFORNIA.

The weather has continued warm and dry, with temperature above the normal and drying winds in some sections. These conditions, with the scanty seasonal rainfall, are causing considerable apprehension among farmers and orchardists. Much grass has turned yellow, and if rain does not fall within a few days grain will make only a light crop of hay; in some localities it is feared the crop will be a total loss if the drought continues longer. Deciduous fruit buds are advancing rapidly, and almonds, oranges and lemons are in bloom. Light frosts occurred during the week.

THE IRRIGATOR.

The Economic Use of Water.

By JAMES MORGAN of Montecito, at the Farmers' Club Convention at Pasadena.

Living in the narrow valley that lies between the Coast Range and the ocean, a strip of land varying from two to six miles in width, with no streams of any considerable size, as none are over ten miles in length, the members of the Santa Barbara County Horticultural Society have been forced by dire necessity to study economy in the use of water for irrigation.

The native Californians who occupied the country previous to the invasion of the United States forces under General Fremont seem to have limited their efforts at irrigation to flooding small patches of ground devoted chiefly to the culture of the chile, the water being diverted from the small mountain streams by rudely constructed dams, and thence conveyed in the rude "sankey" to the required spot. With the settlement of the country by the Yankee came the struggle for the control of these streams, and "riparian rights" have since been the bone of contention, even unto this day.

But the indomitable Yankee was here to stay. Experience has proved this tract to be the ideal home of the lemon, and the '49er and the tenderfoot have vied with each other in clearing off the beautiful live oaks, the grand old rocks and the chaparral, and planting in their stead the lemon twigs bought of the wideawake nurseryman of Los Angeles county for \$1 apiece, and the study of the economic use of water for irrigation began in dead earnest.

DEVELOPING WATER.—Just as our twigs began to develop into trees and show some signs of fruitage, the dry seasons came on and many of our mountain streams disappeared. The case became desperate, and, without system or effort at co-operation, the hunt for water began. One went to tunneling in the mountain, another to boring, and a third to digging, and though there have been some dismal failures, success has crowned the efforts of the many. The tunnels are furnishing some gravity water, but such as can be bought at all sells readily at \$2000 per inch. In a few sections wells have been developed, and the proud owners of such a one can "point with pride" to his lemons, berries and alfalfa. But, at a rule, the water for irrigation in this part of the county is furnished by the pump. We have pumps by man power, pumps by horse power, pumps by wind power and pumps by engine power, and still, as our acreage extends and our trees grow larger, we find we have no water to waste, and its economic use in irrigation is still a serious problem. Thus far the much-talked-of scheme of impounding the rainfall in storage reservoirs has not been tried, and many careful persons doubt the practicability of the plan in the short, precipitous canyons on this side of the mountains.

There is no doubt, however, that the time will come when the Santa Ynez river, which flows parallel with this coast for 100 miles, and but a few miles distant, will be dammed where it cuts through the spurs that extend across its valley, and a vast reservoir thus formed, whose waters will be brought through a tunnel to this side, to supplement our scanty supply. Coming through the mountain far above the ocean level, this water could be utilized in the production of heat and light and in power for various manufactories that would add greatly to the profits and comforts of the valley.

Whether this work will be done by co-operation or corporation depends upon the intelligence and enterprise of our citizens.

APPLICATION OF WATER.—But, having thus pointed out what are our available possible and probable sources of water supply, the real question presenting itself is: How do we use it? In all conceivable ways, from sprinkling out of the nose of a two-quart waterpot, to spreading it out over the surface of a five-acre lot by means of light furrows, fed from a broad flume. With all the various expedients that have been adopted in our efforts to make the most of an insufficient supply, it would seem that something definite should have been learned with regard to the most economical method. But our discussions do not show it. That the furrow system which saturates the entire soil of the orchard to a great depth is a thorough method of irrigation is the contention of many, and is disputed by none. But no effort is made to show that it is the most economical, that the best results can be obtained with the least amount of water. It has been shown that with a plentiful supply and the furrow system, better results were obtained than with a very limited supply by the basin system. On the contrary, the superintendent of the Crocker-Sperry ranch, where 200 acres of trees—about 27,000 in number—are dependent on the outflow from one pump, testifies that he has found the supply entirely inadequate by the furrow system, while with the basin system he has been able to very greatly improve the condition of the orchard and secure an excellent crop of first-class fruit.

The past season the trees were irrigated but twice, with 400 gallons to the tree at each time, and

then most thoroughly cultivated. The condition of the trees and the quality of the lemons attest the success of the treatment and seem to point to a thorough soaking followed by thorough cultivation as important factors in the economical use of water.

The arguments in favor of the basin system are that it insures the even distribution of water, places it just where it will do the most good, and that, as it settles into the ground spreading as it goes, it will reach and feed all of the roots and lead them to a deeper penetration of the moistened subsoil. The objections are that it does not reach all parts of the orchard, and, as often practised, tends to rot the trunk of the tree.

The method of spraying or spreading the water over the surface of the ground has been practised, and is still advocated by some, but the great loss that takes place from evaporation seems to preclude it from being classed among the economic methods of use. Where made at all successful it must be accompanied by thorough cultivation and upon land rich with humus from heavy manuring.

SUB-IRRIGATION.—Sub-irrigation has been tried in various ways and with various degrees of success. The expense of the first cost of preparation for thorough work has interfered with its adoption in large orchards. The gentleman who planted a few orange trees ten or twelve years ago with a limited water supply, reports satisfactory results from two or three methods employed to get the water to the roots without surface evaporation. First, he dug a hole, 3 or 4 feet from the tree, some 2 or 3 feet deep and filled it with sand. Into this the water was run from a hose. Another plan was a box 6 feet long with an interior 1 inch square perforated with small holes. This was buried along above the tree some 2 feet deep, with a tube reaching to the surface of the ground, through which the water was run into the box. Many of our members are much interested in sub-irrigation and have faith in its ultimate success as an adjunct to the economic use of water. Some of these are trying the plan of digging holes near the trees on the upper side, where the ground is sloping, and connecting these holes by shallow dishes, so that as one fills up the water runs to the next, and so on. These require little attention, and when the water, which is run in slowly, has thoroughly soaked the trees, may be filled with manure and left to care for themselves.

Objection to sub-irrigation is made that it does not follow the course of nature, makes the ground under the tree wet, cold and sour, and forms a hardpan which interferes with root penetration.

As the moisture of the subsoil is the aim and object of thorough irrigation, we are disposed to think these points not well taken.

ENDS TO BE ATTAINED.—Our discussions seemed, then, to point to the conclusions that the main factors in the economic use of water for irrigation are:

1. The preparation of the soil, so as to drink and retain as much as possible of the water rainfall, with winter irrigation, if the rainfall is not copious.
2. Thorough soaking of as much of the soil as is possible at each irrigation.
3. Thorough and intense cultivation as soon after irrigation as the ground can be worked.
4. Applying the water in such a manner as to reach the roots and lead them downward, with as little evaporation as possible.

The Census and Irrigation Interests.

The Director of the Census desires to impress upon all engaged in agricultural pursuits in the arid and sub-humid regions of the United States the importance of co-operating with the Census Office in the work of collecting data relating to irrigation.

Without such co-operation, a full and accurate showing of the progress and development of these regions cannot be assured, and the sections wherein reports are incomplete will suffer in comparison with those from which fuller information has been secured.

In thirteen States and Territories irrigation, wholly or in part, is relied upon to produce crops. It is the application, in the strictest sense, of scientific methods in farming. Its continued development results in the internal expansion of the public domain, with which no individual or political party can find fault. It conquers the encroaching desert and reclaims millions of acres of waste lands. It means an increase in the productive area of our country great enough to feed and clothe another nation almost as populous as our own.

It is therefore apparent that an accurate census of irrigation is of great importance. The fact that its success depends in some degree upon the irrigators themselves should awaken their hearty interest in this work. Parties owning canals and ditches, who have received no inquiries, are earnestly requested to write to L. G. Powers, Chief Statistician, in charge of Agriculture, Census Office, Washington, D. C., and blanks will be mailed to them at once. The Director asks that all to whom these inquiries may come will answer the same as fully and accurately as possible and promptly return them.

THE FIELD.

How to Maintain Fertility.

By B. E. MAYNARD of West Side at the University Farmers' Institute at San Jose.

The soil in this valley, when first cultivated by the earliest settlers, was found to be exceedingly fertile; years of cropping, however, without adequate return, have greatly reduced the supply of available plant food. The question of how we are to prevent further impoverishment at the least possible cost, and yet keep our soils up to the highest standard of fertility, is being seriously considered by many fruit growers.

NATURE'S METHOD.—We will first consider nature's own method of fertilizing: Virgin lands are chiefly composed of decaying rocks and vegetable matter; the ash elements, which are supplied by the earth, become soluble through the decomposition of rock, and can be readily taken up by the plant. The decaying vegetable matter, or humus, supplies the necessary amount of nitrogen. The virgin soil is fertile because these food ingredients, through to process of decay, have been accumulating for a long period of time; should this soil be continually cropped, some of the essential ingredients of plant food will in time be removed before their place can be supplied.

The orchardist can, to a great extent, imitate nature in this extent by green-manuring. All plants, however, are not of equal value for this purpose; it has been clearly demonstrated that certain plants derive all their nitrogen from the soil, others mainly from the atmosphere, the latter being by far the most desirable.

All clovers, peas, beans, lupins and others of the legume family are nitrogen gatherers and can, if necessary, obtain entire supply from the air.

It is apparent that, by turning under a crop of these plants, a large amount of nitrogen will be added to the soil without additional cost, that the mechanical condition of many soils will be greatly improved by the addition of humus.

Humus binds together loose sandy soils, and, on the other hand, lightens and mellows heavy clays, but on soils that are naturally cold and wet, humus does positive injury. The orchardist should bear in mind, that other weeds as well as the legumes have a fertilizing value, every plant growing on the soil is helping to change inorganic forms of plant food into organic, which when plowed under soon becomes available to our trees or other crops which have, to us, a monetary value.

GROW WEEDS.—The question is sometimes asked, How can we change the insoluble forms of potash and phosphoric acid in our orchards into readily available forms at the least expense? The cheapest and probably the most effective method is to grow weeds during the winter months and plow them under before there is danger of their sapping the soil of moisture. The practise of depleting our soils of mineral plant food is, however, not to be commended, rather should we return to the soil those elements which are taken away. By simply plowing under such weeds, do not think you are increasing your supply of mineral plant food, you are merely returning it to the soil in a more readily available form, and every crop removed from the land diminishes the original supply.

The farmer should carefully study his plants so as to determine for himself what element is lacking. The plant, with an almost unerring instinct, will indicate its needs. As a rule, we have only to consider four of the fourteen elements composing all vegetable matter: potash, phosphoric acid, nitrogen and, sometimes, lime. Lime is generally found in sufficient quantities in all soils for the requirements of plant life; however the application of liberal amounts of lime often has a beneficial effect, in sour lands, especially. It also aids in rendering the inert forms of plant food more available. The use of lime alone is dangerous, as its tendency is to exhaust the soil of plant food; it should be supplemented by the addition of direct fertilizers. Lining of soils often gives most favorable results in connection with potash fertilization.

USE OF POTASH.—In this country the use of potash has met with much favor, almost invariably giving good returns, more so than phosphoric acid or nitrogen when used singly. When fruits are small or poor in quality or sugar content, other conditions being favorable, a lack of potash is almost invariably indicated, an application of which will overcome this trouble. If fruits are inclined to drop badly, phosphate fertilization is required. An examination of the pit or seed may help to determine what element is chiefly needed; a plump, healthy kernel, the flesh of the fruit at the same time not filling out properly and fruit inclined to drop before ripening, would indicate rather a lack of potash than phosphorous—provided moisture conditions are good. Poor seed formation, condition of fruit as stated, phosphoric acid is most wanted; a reasonable amount of nitrogen also is necessary for the most perfect fruit development; an excess of available nitrogen is not to be desired, as the quality of fruit grown, under such con-

ditions, may be injured. The same may be said of the excessive use of stable manures.

Stable manures supplemented with the commercial forms of potash and phosphoric acid can hardly fail to be of great benefit. Should the cost of seed and planting leguminous plants equal the cost of corresponding amounts of nitrogen in a commercial form no particular advantage is gained by growing and plowing under such crops, as the crop-producing power and humus of many commercial forms fully equals and often far exceeds that of green-manuring. S. Teacock, in the American Fertilizer, gives the following amount of humus in animal fertilizers as compared with that in vegetable matter: One ton dried blood, high grade, or 1.3 tons dried blood, low grade, or 2.2 tons ordinary tankage, will supply as much humus as 26.6 tons barnyard manure or 53.5 tons green clover.

While the given data is not absolutely correct the possible error applies equally to both. The comparisons made are accurate within reasonable limits.

ENCOURAGE CLOVER.—However, should there be a good stand of native clovers the orchard will do well to encourage them. As a rule, should they not be doing well, a surface dressing with some available form of potash and phosphoric acid will stimulate them to the utmost. These elements, in addition to the nitrogen accumulated in the clovers soon after plowing under will supply our trees with the needed plant food.

Many an orchardist to-day looks with complacency upon the verdant appearance of his orchard during the winter months, whereas, a few years ago, he would have been horrified at the same condition of things. We sometimes work very hard to defeat the ends of nature. She, however, has a way of proving herself to be in the right. Rather should we study nature's ways and co-operate with her than through ignorance operate against her.

THE SWINE YARD.

Care and Management of Swine.

By ELIAS GALLUP of Hanford at the University Farmers' Institute at Alta.

The swine industry is just now recovering from a serious condition of congestion. There is one condition that always exists when any line of stock brings a high figure, and that is, that every farmer is seeking to buy the very best stock his means will afford. I think there is no class of men that are more enthusiastic than the swine raisers, and it takes a good deal to discourage them; but unprofitable prices with the depletion of the herd by disease will sometimes do it.

When asked to prepare a paper on swine I wondered whether or not the grunt of the hog could be heard here amongst the enthusiastic wheat and fruit growers, and it seemed to me that with the enthusiasm manifest, that the hog would feel a little lonesome, and I wondered if this gathering really cared a fig whether the hog was mentioned at all or not; but here with your wheat and fruit raising is the place for the hog to grunt and flourish. It is his home, his natural home, and fruit growing, wheat raising, dairying and the hog all work well together.

THE MISSION OF THE HOG.—Nearly all other domestic animals are bred, fed and kept for a diversity of purposes. The hog seems to have but one mission in life which he consummates in death, that of converting the bulky food which he eats into condensed, transportable and preservable human food, and no other of the entire animal kingdom meets all these requirements so completely as the pig. In these latter days humanity has become more exacting in this as well as everything else. We not only require that he converts what he eats into food for us, but we require that it be done in the least possible time; that it be of best quality and greatest quantity for food consumed.

We quote from a speech of Col. D. P. McCracken, the greatest public sale auctioneer: "The hog is sure to return better than his cost; his is the only meat product that improves by curing and goes without roasting, tinning or hermetically sealing, utterly defying the microbe and the elements."

It has been said that the war of the Rebellion was put down on coffee, crackers and pork, and no department heads were sawed off on account of the particular condition of the pork, although there should doubtless be more system in the packing. If there is in this assembly a soldier of the late Rebellion he probably remembers the important part pork took as food in his army ration. The meat was eaten with his crackers, the grease was cream for his coffee, and butter for his slapjacks.

A great many good things are said about the hog. It is said he pays the taxes, clothes the family, schools the children, lifts the mortgage, pays the rent or buys a quill for the daughter's hat, etc. The hog is nevertheless a very entertaining and instructive animal, and has more sense than he has ever been credited with. It is true that he is stubborn and sometimes balky, but that does not argue that

he is short on reasoning power, it merely shows that he is independent, and has the courage of his convictions. In fact we look to the pig for the largest per cent of our profit.

Without him the grain producer is simply working for glory to support railroads, boards of trade and foreign syndicates. We are willing to admit that the pig is very peculiar about some things. He is like some people, puts his dirty foot in his own business, sticks his nose in other people's business, and is continually getting into the housewife's kitchen and into her pie crusts and doughnuts. The world could not get along without the pig. If you reach up and shake the old hog then you will find the fruit falls on the tables of every nation and every clime. The rich eat his flesh because they like it, the poor eat it for economy's sake. The world at large will never go back on the genuine American hog. The flesh of the hog is needed in the cold regions of the Klondike; it is needed by every ship that sails the high seas; it is needed in our army and navy; it is needed everywhere. The ham is one of the most highly prized delicacies of the swell restaurants and the fashionable cafés of the French capital, and the snob swell hotels of London. The ingenious Yankee cannot counterfeit the ham any more than he can the egg that goes with it.

SELECTION OF BREEDING STOCK.—It is no new thing for me to tell you that the average nurseryman is a closer student in matters relating to the production and maintenance of his nursery stock than the average swine raiser is in the breeding and selection of his breeding stock.

In the purchase of an animal do not let a dollar close to your nose attract your attention so that you cannot see a twenty-dollar gold piece 10 feet away. In other words, do not pay \$5 for a poor animal to head your herd from your neighbor, when you can by a little effort secure a good animal from a reliable breeder at a good fair price. Visit the herd; buy your pig at three or four months old; you can just as well raise him yourself as to pay some one else for it. In the selection see that he is well bred, and individually a good animal, and of the right conformation, if possible, to mate with the balance of your herd.

ACTIVITY IN THE HOG.—Several months ago, while judging the swine at the State Fair, I was criticised for insisting on having the competing animals walked around the show ring. One man said "The old man is trying to get the speed of the animal." But after all what is more pleasing than to see a large fat hog walk away from you like a large active draft horse? Hogs should have action as well as horses. A lazy, sluggish hog is a poor feeder; he moves around just fast enough for disease to catch him, and grim death to take him in.

SELECTION OF BREEDING STOCK.—Selecting his breeding stock is an important duty which devolves upon the farmer, and it requires, to be successful, a high order of intelligence and the exercise of good judgment. The breeding boar should be selected with discrimination, and suitably mated to counteract certain defects, all the time looking forward to the production of a lot of youngsters that will be an improvement on the parent stock. Especially should the male be a typical animal as he may be the progenitor of many a young grunter. Although the sow should be as well bred as it lies within the power of the farmer to procure, it is much easier and cheaper to introduce improved blood by the purchase of a high bred male.

In disposition I should aim to select one with plenty of action and life, and a general all-round good feeder, but not on the cranky or restless order, from the fact that they are apt to reproduce these characteristics, which are very undesirable and hard to handle, and it is very undesirable to put them or even keep them in fair condition. As to the disposition of a boar, much depends upon the way you manage him. You should never whip or punish a boar. If you do, he will be ready every time he meets you for a scrap. Our English cousins have found that Boers are very good fighters, and we should profit by their experience. I have many large boars and never have them get cross and unmanageable. In fact a hog of any kind has no sense if you punish him by whipping. I never attempt to drive a hog. I always call them and let them follow. If you attempt to drive them you are likely to get mad and say words that you would not like your grandmother to hear.

MANAGEMENT OF BOARS.—I have usually in my Institute papers devoted considerable space giving my ways of managing my breeding boars. I will say keep him in a lot by himself, and always have him in good condition, strong, vigorous and active. Feed him a variety of food. Give him occasionally a little salt and ashes, and a small lot to exercise in, shelter from rains in the winter and the sun in summer.

A boar must have ambition to take the necessary exercise in order to insure a vigorous and strong constitution which all first-class breeding boars must possess. Coat is another very essential point in selecting a breeding boar, as it is our only guide to the quality the hog possesses, and a hog without quality is almost worthless as a sire. The coat should be fine, smooth and straight, lying close to the body. Avoid coarse, wiry coats. We like to see our breeding boars smooth and free from wrinkles.

(TO BE CONTINUED.)

THE SUGAR BEET.

Feeding Value of Beet Tops and Beet Pulp.

The American Beet Sugar Company of Chino, San Bernardino county, has prepared a statement on the value of beet refuse as compared with other available dairy feeds. It will be interesting to all our readers who are growing beets or are within reach of the pulp supply of the sugar factories.

Beet farming is not only beneficial to the land in increasing the depth and physical condition of the soil on which the crops are grown, thus enlarging their yield, but also the beet tops and beet pulp furnish a valuable feed for sheep and cattle. A yield of 15 tons of beets leaves on the field 6 to 8 tons of green tops, and for the same 15 tons of beets delivered at the factory the company will give 7½ tons of pulp, as the company gives to the grower one-half of the weight of his beets in pulp at 10 cents per ton when taken on board cars at the factory, or when hauled away by teams from the factory loading chute. One acre of beets, therefore, yields to the grower from 6 to 7½ tons of pulp at a cost of from 60 cents to 75 cents per acre if taken at the factory, in addition to the returns received from the beets delivered at the factory and the beet tops which he retains.

TABLE OF VALUES.—The following table shows the value of the different feeds compared with beet tops and pulp:

Feeding stuff.	Value per 100 lbs.	Value per ton.	Value per acre.
Alfalfa hay.....	\$0 40	\$ 8 00	\$48 00
Barley straw.....	0 25	5 00	9 00
Barley grain.....	0 75	15 00	18 75
Barley hay.....	0 45	9 00	18 00
Beet pulp.....	0 06.75	1 35	10 12
Beet tops.....	0 12.96	2 59	15 54

Therefore, 15 tons of beets will bring to the grower \$15.54 worth of tops and \$10.12 worth of pulp per acre, less 75 cents, price of pulp at factory, an increase of over 40% on the beet crop, figuring 1 ton of beets at \$4, which can be taken as a low average price. It is remarkable how stock will improve on these two products from beets, which up to the present time have been a loss to the growers.

FEEDING TOPS AND PULP.—The beet tops are best utilized by bringing cattle or sheep upon the beet fields as soon as the beets have been carted away. Especially sheep will do surprisingly well on beet tops and fatten quickly. The droppings of the animals remaining on the land will contain almost all the mineral plant food of the tops, so that it is, for the fertility of the land, the same whether the tops or the droppings are plowed under.

Pulp fed mixed with chopped hay from alfalfa, barley, wheat, etc., or with chopped straw from barley, wheat, beans, etc., makes a valuable feed. By adding some ground corn, barley or bran, cattle or sheep can be fully matured equal to the grain-fed cattle of the Middle States. The following is a good, cheap daily ration for simply maintaining cattle or sheep, based on 1000 pounds live weight: 100 pounds pulp, 12 pounds barley, wheat or bean straw.

For fattening purposes, such as is usual on the Pacific coast: 100 pounds pulp, 10 pounds barley hay, 10 pounds alfalfa hay; or 100 pounds pulp, 10 pounds barley hay and 10 pounds bean straw; or 100 pounds pulp and 20 pounds barley hay.

For thoroughly maturing cattle and sheep the following ration can be recommended: 100 pounds pulp, 15 pounds alfalfa hay and 10 pounds barley meal; or 100 pounds pulp, 15 pounds bean straw and 10 pounds corn meal; or 100 pounds pulp, 15 pounds barley hay, 5 pounds corn meal and 5 pounds wheat bran.

For dairy cows, if pulp is fresh: 80 pounds pulp, 15 pounds alfalfa hay, 4 pounds corn meal and 4 pounds barley meal; or 80 pounds pulp, 15 pounds barley hay and 8 pounds wheat bran; or 80 pounds pulp, 10 pounds barley hay and 10 pounds alfalfa hay; or 80 pounds pulp, 10 pounds barley hay and 10 pounds bean straw; or 80 pounds pulp and 20 pounds barley hay.

If fermented pulp is given, feed 20 pounds of pulp less per day, increasing other foods in proportion.

PULP IN THE SILO.—Pulp can be siloed to good advantage and will keep well for many months, undergoing in the silo a fermentation, in which state better results are obtained than feeding it fresh. In Europe pulp is fed the year round, farmers taking it during the operation of the factories and siloing enough to last until the next season. A simple and cheap way of siloing is as follows:

Dig on land which drains well a pit 8 to 12 feet wide and 4 to 6 feet deep and of any desired length. Put the pulp in the pit and tramp it in tight, thus excluding all air and preventing rotting. Give the mass above ground a cone-like shape, cover it with about 3 inches of straw and 6 inches of dirt, or do not cover it at all. In the latter case, however, the upper part of the pulp will be lost to a depth of about 6 inches. After about a month the fermentation is complete and the feeding of the sour pulp can begin.

The pulp can also be mixed to good advantage in the silos with chopped cornstalks or straw from bar-

ley, wheat or beans. Such a mixture makes a valuable feed, supplying both nutritive and roughness. Farmers who now turn their cattle into their corn fields to feed on the stalks by cutting this and mixing with pulp would have a feed on hand sufficient to support many head of cattle the whole year.

To properly silo, first put a layer of pulp on the bottom about 2 feet thick, then 1 foot of chopped roughness, then 2 feet of pulp, and so on until the silo is completed, and trample in well, taking care that the bottom, sides and top consist of a layer of pulp, which serves to keep everything airtight. Many other farm products, green or cured, can also be advantageously siloed with pulp in the same manner.

If dairymen are willing to take home the skim milk from the dairy to feed their hogs, they should still more be glad to use the pulp from their beets for their milch cows, as this will increase the milk in quantity and quality.

Lime cake, which can be obtained free at the factory, is a valuable fertilizer, containing, as it does, part of the mineral and vegetable substances which are taken by the beets from the soil; and if returned to the land, especially where the soil is heavy, will not only enrich it but improve its physical condition.

FLORIST AND GARDENER.

Roses for Southern California.

Elmo R. Meserve, of Los Angeles, gives the Times an outline of his wide experience in rose growing, which is applicable to most of the valley and foothill regions of the State.

NOTES ON GROWING.—It is now time to cut back your rose plants, taking out all the dead and useless wood. Cover your ground well with manure, and give thorough spading. Would also advise another coating of manure for the surface, to act as a mulch, as this is much better than the constant working of the soil. You will obtain best results upon heavy, stiff soil, and with plenty of water. Rose bushes seemingly thrive upon any soil, and bloom freely under any ordinary treatment, but in order to obtain choice bloom you will find it necessary to meet special requirements. Do not endeavor to keep your bushes growing throughout the year. Stop watering in August and September, allowing your plants a much-needed rest.

Many of our best varieties are subject to mildew. Purchase a few pounds of powdered sulphur and tobacco dust. Put in one of those little powder bel-

lows, and give your plants a good dusting with the mixture once or twice a week. You can entirely control the mildew, and the tobacco will keep away the green aphid or louse.

EXPOSURE.—Many roses like a partial shade. That fine yellow climber, the Marechal Neil, does best on the north side of the house. La Marque does well to the south or west, and Reine Marie Henriette prefers the morning sun and afternoon shade. Reve d'Ore (the climbing Safrano) is a very thrifty grower, and likes an open exposure. William Allen Richardson, the rich apricot yellow, does not enjoy the hot, sunny places. Gold of Ophir, Lady Banksia and Crimson Rambler are luxuriant growers, and bloom in great profusion during April and May (blooming much earlier this year than usual) and do much better when given freedom upon fences or over buildings. The single, White Cherokee, another spring bloomer, prefers the sunny side of the house.

DISCUSSION OF VARIETIES.—There are hundreds of fine varieties of roses, but there are a few particularly adapted to this section, and seem to have the combined merits of the many.

In white: First comes the new hybrid tea Kaiserine Augusta Victoria; second, the Eliza Sauvage; third, the Bride; fourth, Niphetos. You will find that the Bride is often tinted upon the outer petals, coloring back to its parent, the Catherine Mermet. This variety is quite subject to mildew. Eliza Sauvage is an old favorite, good grower, with fine, healthy foliage. The Niphetos is good, but somewhat weakly.

In pink: First, Maman Gochet; second, Bridesmaid; third, Catherine Mermet; fourth, Duchess de Brabant; fifth, Bougere; sixth, La France; seventh, Caroline Testout.

In red, scarlet, crimson: First, Papa Contier; second, Mme. Lambard; third, Ulrich Bruner; fourth, Meteor; fifth, American Beauty; sixth, Gen. Jacqueminot; seventh, Prince Camille de Rohan, often called Black Prince; eighth, Louis Philippe, a very free bloomer and good bedding variety.

In shades: First, Marie Van Houtte; second, Bride; third, Homer; fourth, Laurette; fifth, Rainbow. Yellow and fawn: Perle des Jardins, Safrano, Isabella Sprunt, Mme. Falcot and Suuset.

THE BEST DOZEN.—I am often asked to name the one dozen best varieties for a small rose garden in southern California—two climbers and ten bush varieties, the points in selection to be freedom of blooming, exemption from disease and good cutting qualities. The climbers are difficult to select, but first of all should Reve d'Ore, and then, according to exposure, Henriette or La Marque. For the garden,

Papa Gontier, Marie Van Houtte, Maman Cochet, Duchess, Augusta Victoria, La France, Meteor, Eliza Sauvage, Safrano and Laurette. A dozen bushes from which to cut the greatest amount of bloom—three Papa Gontier, three Maman Cochet, three Sauvage and three Laurette.

FOR THE MARKET.—To those intending to grow roses for the cut-flower market, plant Papa Gontier, Maman Cochet, Bridesmaid, Ulrich Bruner, Magna Charta, Sauvage, Bride, Augusta Victoria and La France. Remember that location and soil must be carefully considered, and that you must have an abundance of one variety, rather than a few each of many varieties.

THE GRANDEST ROSE.—The Marechal Neil stands at the head of all varieties. It is individual and needs individual treatment. Select a strong two-year-old budded plant. Do not purchase one grown upon its own root, as it is usually short lived and a poor bloomer. The budded one will be better in every respect. Plant on the north side of the house, and do not prune more than the dead stems, as the variety does not like pruning.

THE VETERINARIAN.

Answers by Dr. Creely.

TREATMENT FOR A HORSE.

TO THE EDITOR:—I have a horse that is troubled with diarrhoea or looseness of the bowels when driven. At other times he seems to be right. He has been fed on wheat straw and middlings mostly, but rolled barley the balance of the time. Please advise what to do.—J. W., Yuba City.

Give one-half teaspoon daily of sulphate iron, powdered and dried. Do not give too much water before driving, and have his teeth floated.

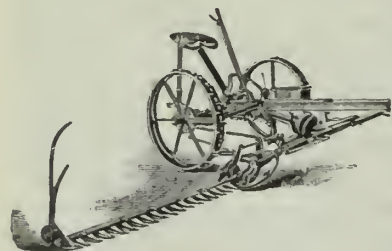
A CASE OF BARLEY BEARDS.

TO THE EDITOR:—I have a mule which has a small sore under her jaw. This sore made its appearance three years ago and twice I have cut it and taken out barley beards. The sore heals over at times, only to open again. It has a very offensive odor. The animal retains her usual good appetite and is apparently in good condition. Would you kindly suggest a remedy?—JOHN WAGNER, Orange county.

More of the barley beards yet remain. Remove them with a curet and heal as a healthy wound, viz., wash daily with carbolic water and apply zinc ointment.

E. J. CREELY.
510 Golden Gate avenue, S. F.

OSBORNE MOWERS AND RAKES.



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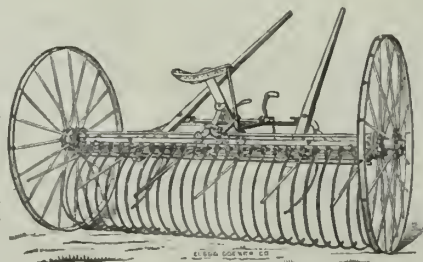
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Agricultural Review.

ALAMEDA.

BELGIAN HARE ASSOCIATION.—Oakland Enquirer, Feb. 16: The regular meeting of the Central California Belgian Hare Association was held on Monday evening. In the absence of Pres. F. E. Mason of Alameda, Vice-Pres. H. Pittick of Elmhurst presided. The Sec'y is Dr. E. W. Bradley. The club has a membership of twenty-eight, representing San Jose, San Francisco, Palo Alto, Stege, Alameda and Oakland. The purposes of the club are to encourage the raising of a pure breed of Belgian hares and to increase interest in this pursuit. Meetings are held on the second Monday of each month.

RECLAIMING LAND.—Oakland Enquirer, Feb. 10: The Contra Costa Water Co. has commenced work on reclaiming 460 acres of tide land adjacent to Alvarado. A levy is to be constructed around the land with the aid of a big dredger. It is to be 20 feet thick at the base, 6 feet high and 8 feet across on top. A drainage canal will be cut through the land, with feeders, the earth thus secured to be used in making the levee. Sluice gates will be put in so that the land may get the fresh water floods, with their alluvium deposits. After the deposit has become settled the water will be drained from it. Steam plows will then break it up as soon as the ground is dry, and then it will be ready to receive another alluvial flood. After the land has been reclaimed it will be a valuable tract for farming purposes. There will be no danger of drouth, as one of the water company's big artesian wells can be pumped on to it at any time, flooding it in a day.

CALAVERAS.

A BIG EGG.—Angels, Feb. 16: An egg found by G. W. Getchell, near Sheep Ranch, laid by one of his hens, measures 6 1/4 inches one way and 18 inches the other.

FRESNO.

LINNETS DOING HARM.—Sanger Herald, Feb. 17: Fruit buds are swelling very rapidly, and another week or two will see the almond and apricot trees in full bloom. Linnets are playing sad havoc with the apricot buds, causing much damage to the orchards in this vicinity.

CROP REPORTS.—Growing grain is looking as well as we have ever seen it at this season of the year. Nearly all have finished seeding, and many are now summer-fallowing. Some farmers claim that more land should be summer-fallowed, as it is the only way, they say, to insure a good crop even in favorable seasons. Dry seasons give the land a rest and make crops of the following years better; but, unless the land is worked, it does not acquire the richness which plowing gives it. On land that some of our farmers are now summer-fallowing volunteer grain is nearly a foot high; and when this is turned under it will add much to the fertility of the soil.

GLENN.

PLANTING ORANGES.—Orland Register, Feb. 9: The Orland Citrus Association will set out twelve acres more to oranges this year. Their experience for the past three years has proved the investment to be a good one.

HUMBOLDT.

PRODUCE REPORTS.—Eureka Standard, Feb. 10: Exports of butter during January amount to 140,180 pounds, as against 143,300 pounds in January, 1899. There were shipped last month 603 cases of condensed milk and cream, which is an increase of 115 cases over the previous January. Among other items there were 8945 boxes of apples, 5908 sacks of potatoes and 429 sacks dried peas.

KINGS.

FREAK EGG.—Hanford Journal, Feb. 13: A curiosity in the egg line has been brought to our office. It is two separate eggs, attached to each other by a ligament, one containing the yellow egg sub-

stance, while the other contains the white egg substance only. The eggs are of small size and the shell is soft.

LOS ANGELES.

GRAIN NEEDS RAIN.—Pomona Times, Feb. 14: The present dry weather is causing some uneasiness, especially among hay and grain growers. On some of the southern slopes the grain fields are turning brown, but growers say that rain within a week or ten days will yet save it. Orchardists are not so much concerned as last year for two reasons. They have done heavier winter irrigation, the zanjeros having turned about as many heads as in midsummer, and greater reliance will be placed upon the wells than heretofore. No one has the blues as last year at this time.

FARMERS' CLUB.—At the last meeting of the Pomona Farmers' Club there were adopted the four propositions laid down at the Pasadena annual meeting of clubs for the work of the year: 1. Appoint a club reporter to supply reports to the papers and to the Deciduous Fruit Association at Los Angeles. 2. Accept "green manuring" as a topic for a paper to be read at the next annual meeting of clubs. 3. To discuss the topics, by paper or otherwise, recommended by the annual convention of clubs. 4. Each club to pay 50 cents to the next annual convention of clubs, the fund to be used for a prize for the club making the best report of the year.

MONTEREY.

SUGAR FACTORY ITEMS.—Salinas Index, Feb. 15: The total number of tons of beets received and sliced at the Spreckels factory during the season just closed was approximately 175,000. The total number of tons of sugar produced was over 20,000. The slicing machinery was in operation 1951 1/2 hours. The delivery of beets at the factory was commenced on August 1, 1899, and the last beets were delivered on February 5, 1900. The slicing of beets for the trial run began August 7th, and the actual run commenced on September 1, 1899, and continued, with intervals owing to a succession of rainfalls, to Feb. 6th, at which time the beets were all sliced. The run was unusually successful for a first year. The machinery is in excellent condition and its ability to do the work has been well demonstrated.

POTATO CROP.—F. Blackie, the warehouseman, reports potatoes received at various points in the Salinas valley during the past season, beginning June 1, 1899, as follows: Moss Landing, 1080 tons; Castroville, 1126; Moro Cojo, 574; Neponset, 754; Graves, 2504; S. P. Milling Co., Salinas, 152; City Warehouse, 235; S. P. Depot, 50; Spence, 80; total, 6555 tons. In the season of 1895-6, 14,535 tons were warehoused; in 1896-7, 10,305; in 1897-8, 14,993; and in 1898-9, 1365 tons.

NAPA.

FARMERS ARE BUSY.—Calistogian, Feb. 9: Pruning is about finished, except the grape vines, and the farmers are taking advantage of the good weather and are busy plowing and seeding.

SAN BERNARDINO.

RAIN NEEDED.—Chino Champion, Feb. 16: Upland barley is in a critical condition for lack of rain. Some of it, perhaps, is already past saving. Many hundreds of acres will be in another ten days if no rain comes. On the lower lands, however, the barley is yet looking very well and will pull through with considerable more drouth.

ANNUAL MEETING.—Redland Facts, Feb. 15: At the annual meeting of the Horticultural Club, L. M. Winston was elected president, E. D. Herdman vice-president, and W. S. Devol secretary and treasurer, for the ensuing year.

SAN LUIS OBISPO.

CREAMERY WILL REOPEN.—Arroyo Grande Herald, Feb. 17: The directors of the Arroyo Grande Creamery Co. held a meeting and decided to reopen the creamery. Owing to bad dairy seasons, it has been closed for two years. Romie Lowe of Oak Park is to be manager, and it is the intention to start next Monday.

SAN DIEGO.

BELGIAN HARE SHOW.—San Diego, Feb. 17: The first Belgian hare show of the San Diego Poultry and Pet Stock Show opened to-day with over 200 entries. The Belgian hare interests are already very large in this county, as they are all over southern California. In this show there are two classes—one for hares from San Diego county alone and the other with no limits. Good prizes are to be given in each class, but they are to be kept away from each other, and hares cannot be entered in both. P. E. Crabtree is to judge the hares. There are already many thousands of dollars invested in Belgian hares in this county and the industry is growing with great rapidity.

SANTA CLARA.

JOINING THE CURED FRUIT ASSOCIATION.—Mountain View Register, Feb. 16: The orchardists of Mountain View have nearly all signed contracts with the California Cured Fruit Association. Nearly 95% of the acreage is in, and it is thought that nearly all of the 115 acres remaining will be given in a few days.

TREES ARE BLOOMING.—San Jose Mercury, Feb. 15: The prevalent warm weather of a few days past has rushed the season somewhat. Almonds are blooming. Orchardists having apricot trees in sheltered places state that these are ready to bloom. In some sections of the district peach buds are swelling. There is a tendency on the part of the prune fruit buds to fill. The want for more rain is general throughout.

FARMERS' MUTUAL INSURANCE.—San Jose Mercury, Feb. 18: At the last regular meeting of the Farmers' Club the chief subject of discussion was the advisability of forming a co-operative fire insurance company. Mr. Brainard explained the legal requirements for the organization of such a company and the powers entrusted to it under the State statutes. Judge Hurlbert read a letter from the Sonoma County Farmers' Club, giving the result of their investigations as to the desirability of forming a mutual insurance association. It was unqualifiedly in favor of its formation. They said that there were 940 mutual insurance associations in nineteen States, and the amount of insurance carried by them is \$400,000,000 and the average rate is \$1.37 per \$1000 per annum. A resolution was passed adopting the recommendation of the Legislative Committee, that the club proceed to organize a County Insurance Co. under the State laws as soon as \$100,000 of desired insurance is subscribed. A committee, composed of Mr. Brainard, Judge Hurlbert and Mr. Robertson, was appointed to take the matter in hand.

AGRICULTURAL SOCIETY MEETING.—San Jose Mercury, Feb. 2: At the annual gathering of life members of the Fifth District Agricultural Association, Geo. Y. Bollinger was elected president and Jas. W. Rea, A. C. Darby, Valentine Koch and W. A. Parkhurst directors.

SANTA CRUZ.

EARLY PEAS.—Watsonville Pajaronian, Feb. 15: The local market is being supplied with a choice quality of green peas. They are produced in a sheltered canyon in Casserly district, a section of W. V. Gaffey's ranch. Each year the earliest vegetables in the local market come from that district.

COLD STORAGE APPLES.—From a recent letter from an Eastern point we learn that Pajaro valley apples which were picked before the heavy storms have been coming out of cold storage in first-class condition. Where water got into the open blossom end of an apple the keeping quality has not been so good. Eastern cold-storage experience is showing that the fall-picked apples are the late keepers.

APPLE TREES ARE GOLD MINES.—The work of the horticultural commissioners in Pajaro valley is being actively assisted and carried out by orchardists. They are awake to the imperative necessity of having trees free from pests in order to have clean and marketable fruit. The bugs and their hatcheries should be exterminated. Each healthy apple tree in this valley is an unfailing gold mine, and it can be kept so by watchfulness and observance of the directions of the horticultural commissioners.

SHASTA.

STOCKMEN ORGANIZE.—Redding Free Press, Feb. 17: The Happy valley stockmen have formed an organization for protection of their interests. At a meeting held at Bella Vista A. R. Bowler was elected president; George Boyle, vice-president; William Yank, secretary, Mr. Smith, treasurer.

SONOMA.

CURED FRUIT ASSOCIATION.—Santa Rosa, Feb. 16: W. E. Woolsey, local director of the California Cured Fruit Association, has completed his canvass of this county in the interest of the Association. He has been accompanied over the county by Judge Aiken, who delivered addresses in all the principal fruit districts. Mr. Woolsey states that the growers are all deeply interested and most of them have expressed a willingness to become members of the Association. Mr. Woolsey says there will be no difficulty in securing the signatures of 75% of the growers of the county to Association contracts.

CITRUS FAIR.—Cloverdale, Feb. 19: Many hands are at work putting on the finishing touches for the grand opening to-morrow. The exhibits are numerous and extensive, the fruit the best ever produced in this section, and the people are enthusiastic over the success that has so far been accomplished. The programme

for to-morrow will include afternoon and evening band concert. A. Sbarboro, secretary of the Italian-Swiss colony, will deliver the opening address in the evening.

OUTLOOK FOR WOOL.—Cloverdale Reveille: Wool growers are looking forward to the spring wool sale with much interest. Cudde Elkins, a well-known grower, said that he had been offered 20 cents, but he thought the price would go higher. The lambing season is now on with a great many growers. The weather is very favorable and there is plenty of grass, so that little fear is apprehended of any great loss later on.

STANISLAUS.

CREAMERY REPORTS.—Merced Sun, Feb. 16: The New Era creamery at Newman, during the past year, received 3,559,674 pounds of milk, made 160,970 pounds of butter for outside sale, and supplied home patrons with 20,702 pounds and paid for milk \$30,374.60. The Acme creamery, started later, received 4,131,934 pounds of milk, made 169,392 pounds of butter for the outside market, and supplied 8547 pounds to home customers, paying out for milk \$37,747.

SUTTER.

GOOD PRICES FOR STOCK.—Yuba City Farmer, Feb. 16: At the auction sale of property of the D. E. Knight farm, of the 3200 sheep sold, ewes brought as high as \$4.70 apiece and yearlings \$3.76. Milch cows sold at \$52, yearlings at \$20, steers at \$33.50 and stock cattle at \$28.50. The horses also sold well. The principal bidder for the stock sheep was B. S. J. Hiatt of Kirkville and for the mutton sheep J. A. Woodward of San Jose.

LEVEE DISTRICT OFFICERS.—Yuba City Farmer: At the election held at Nicolaus last Saturday the following officers were re-elected in Levee District No. 2: Director, Charles Engasser; assessor, C. Grider; collector, E. J. Wessing.

TULARE.

BIG DIVIDENDS.—Tulare Register: Following is the report of S. A. Nickols of Tipton on his poultry for the year 1900: Starting Jan. 1st with 65 hens, he bought feed for \$38.30, sold eggs for \$65.50 and chickens for \$34.50. Same amount of stock an hand Jan. 1st, 1900. Number of eggs produced, 5958; clear profit on the 65 hens, \$60.70.

ARIZONA.

IRRIGATION DECISION.—Phoenix, Feb. 10: Judge Street, in the District Court, rendered a decision in favor of the canal companies in cases brought by farmers to compel the companies to furnish them water without they (the farmers) having to buy water rights. The farmers contended that the water belonged to the land under the irrigation system and that they were appropriators.

SHEEP INDUSTRY.—Los Angeles Herald, Feb. 10: About 250,000 sheep from the northern part of the Territory are within a radius of sixty miles of Phoenix, and the season of shearing has opened. Last season most of the sheep were centered within twenty miles of that city, but because of scarcity of rainfall they are now forced back toward the hills, where there is water. It is estimated that there will be 1,000,000 pounds of wool shipped through Phoenix this year, while last year the amount was about 850,000 pounds. The increase is due partly to the greater number of animals brought south this year and partly because there is a general increase all over Arizona. In northern Arizona, where a number of sheep have been retained for fleecing late in the season, the output of wool will be greater than it was last season, and the price is 50% better. There has been plenty of rain in northern Arizona, but the small supply in southern Arizona will hurt the sheepmen. Last year they shipped about 30,000 head for market, but the absence of grass in southern valleys will make it impossible to fatten sheep for shipment this season.

Beware of Ointments for Catarrh That Contain Mercury.

As mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is tenfold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

Sold by druggists, price 75c. per bottle. Hall's Family Pills are the best.

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The Two Great Hybrid Berries. Crossed (by Mr. Burbank) from Black and Raspberry. 25c each; \$2 doz. Also Wine and Logan Berry plants at one-half the above price. E. J. TALLAFERRO, Fair Oaks, Sacramento Co., Cal.

ELGIN Watches keep accurate time. Sold by jewelers in cases to suit. Prices reasonable.

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THE LAWRENCE-WILLIAMS CO., Cleveland O.



THE HOME CIRCLE.

In Ægina.

Through the white arches, down the temple stair,
Where tangled myrtle blossoms in her way,
There comes, her golden fillet half astray,
A priestess of Diana, lithe and fair
And slender-footed, with warm-colored hair
That catches close the sun's last burning ray.
The tamarisk branches at her passing sway,
Scenting afresh the incense-laden air.
She breathes the spell of slow-approaching night,
The placid sea, the rocks in fastness hurled;
The clear, still marble shines behind her bright—
And mystery, its sail but half unfurled,
Lies on her face and leaves a gleaming light:
The beauty of the young days of the world.
—Charlotte Becker.

Winter Moonlight.

Beyond the tranced shadow of new night,
Low brooding down long hill and barren field,
A deepening whiteness of pure cloud revealed
An eastern vernal, burning silver-bright.
And from its fires, far-fanned with mystic might
And voiceless, the enshrined queen concealed
Flung straight and wide across the slumbering world
A radiant arrow, dipped in crystal light.
And lo! a swift confusion did disclose
How Dian stirred within her shroud, and fled;
Her fleecy veil by sudden tempest riven,
And in her full-orbed loveliness uprose,
Pale in a deep serenity, and sped
Up a high purple pathway into heaven.
—Esther Walker.

The Lost Bracelet.

Myra Kent was sitting in a low chair on the balcony, her head leaned back, her eyes lowered to the face of the young man who lounged on the steps near her—a handsome young man, the "second Adonis," the ladies were wont to call him.

"What an awful pity that Tom Rowen has no money," they said to themselves, with the most pathetic emphasis. "His face and his manners are perfect."

"They like to flirt with me," he said, with a smile of self-disdain, "but they know better than to say 'Yes' to me."
To an observer, her eyes seemed resting on his now, but he knew they were only idly glancing.

"Do you value the trinket so highly?" Rowen had just asked.

"The trinket?" she exclaimed, indignantly. "I do not call it a trinket. It is a most precious relic; it has been in the family almost 200 years. I would give anything to have the bracelet back again—anything!"

"Let us be practical. What would you bestow upon the man who will restore your bracelet to you?"

"Anything—anything!" cried Miss Kent, sitting upright, her eyes sparkling. "You have no idea how much I want that bracelet! Besides my affection for it, do you know there is a legend connected with it, to the effect that so long as it is kept in the family, good luck will never desert the Kents?"

"But the reward?" quietly persisted the young man.

Myra Kent laughed—the sweet, sincere laugh which Rowen had come to know so well, and which was so different from that of most girls of fashion.

"There is little I would not give," she said, half in earnest. "I believe I would give my hand, if the man did me the honor to want it."

Tom Rowen rose to his feet. Though his eyes glowed peculiarly, though his face was pale, he yet commanded his voice, so as to say, mockingly:

"Of course, Miss Kent, you are safe enough in adding that last clause to your offer of reward. You know the bracelet is gone irrecoverably. You lost it on the highway more than a week

ago; you have yourself looked over every foot of the road. Some tramp has found it; it is probably in some obscure pawnbroker's shop by this time."

He added a few more words on some other subject, and then sauntered slowly away down one of the walks of the garden and disappeared among the trees.

As soon as he was out of sight his whole appearance changed. He looked alert and alive. He stood still a moment, glancing about him.

"It is all folly, I know, but I am going to try to find the bracelet for her. I should like to do that. Of course I cannot ask her to be my wife; she is the last person under the sun to be a poor man's wife. Her father would disinherit her, and how am I going to get the fol-de-rols which are necessary to her existence?"

While he walked he was looking among the dust covered golden rod and grasses along the roadside. He went on thus for a half a mile, then he reached a turn, and retraced his steps on the other side of the way. He gave up the next three hours to a thorough examination of the space of road where the bracelet had been lost.

Like all people who are looking for some lost article, it seemed to him that underneath every shrub, secreted behind every stone, he should find the treasure. There is a wonderful fascination in such a search.

It was not until dusk that Rowen gave it up for that day, and returned to the hotel in the village where he was staying.

For the next two days he was engaged in the same way, and he did not see Miss Kent, who wondered at his absence.

But why should she remember him? Was not rich young Townsend, who was said to be "dying for her," really at her call? And were there not picnics and parties, and excursions, in which Myra Kent was the principal figure?

Rowen often asked himself if the girl knew that she had not seen him. It was in vain that he scoffed at himself, for every hour in the day he must own that he loved her—that the thought that he must live his life without her was so unbearable to him that he fought against it.

On the fourth day from that on which the conversation on the balcony had been held, Rowen said that he would give this one day to the search, and, if the bauble was not found, he would summarily cut short the fascination which bound him—he would take the evening train to London.

"I think I am losing my senses," he said, as he strolled down the road, his eyes fixed on the ground, his cigar forgotten between his lips.

There was a rustle in the bushes, a shrill bark sounded, and then out dashed a little Skye terrier, who flew at Rowen in an exuberance of gladness at sight of him.

Rowen stooped to caress the creature, which belonged to Myra Kent, and was her constant companion.

The young man's eyes glanced about, hoping to see the dog's mistress; but no one appeared, and at last Rowen was sure she was not near.

Instead of going back in a few moments the dog kept near, and at last, when Rowen tried to drive him away, Alfred persisted in remaining.

"You are not at all like your mistress," said Rowen, with some bitterness. "She would not manifest such delight at being with me."

The man and dog went on slowly, and it was not until some minutes had passed Rowen noticed that the terrier continually turned back and looked at him as if asking him to come.

Idly at last Rowen turned and followed Alfred, who leaped a stone wall and flew across a field covered with faded goldenrod. He uttered short barks of satisfaction as he went, and was constantly turning about to see that Rowen followed. He went faster and faster, so that finally Rowen was nearly running to keep him in sight.

Suddenly the dog leaped and scrambled down the steep bank of a dry water course, and when Rowen came to the edge and looked down he uttered an exclamation of alarm and surprise, and then swung himself down from a birch

tree and fell rather than walked to a place where lay a figure whose blue dress and bright scarf were familiar to his eyes.

"Myra?" he cried, as he flung himself down by her.

All his love and agony were in that word. He had feared to find her senseless, dead, but she looked at him, and a faint smile came to her white lips. As she met his eyes, as the fire in them poured down upon her, a tinge of color came into her face.

"I think most of my ribs are broken, and perhaps the rest of my bones," she said, with an effort at speaking as lightly as her words sounded. "But I've found my bracelet."

As she spoke the last words her face turned deathly white, and she sank still further back in unconsciousness.

A quarter of an hour later, when life returned to her, she found herself supported in Rowen's arms, and before she opened her eyes she felt a pair of trembling lips pressed passionately upon her own.

"Forgive me! Forgive me!" murmured Rowen. "I was wild—I thought you dead! May you never suffer as I have."

She tried to withdraw herself, but he held her fast; he could not let her go. There was something in her face that emboldened him, that made his hopes rise intoxicatingly.

"And now that I am not dead?" she whispered, at last.

"Ah, now—now I will never let you go!" he exclaimed, holding her yet closer. "Have you ever guessed how I love you?"

"Yes—I half fancied—but—" was the low response.

"But what?"

"I dared not think of it because—because I was afraid I should discover that I loved you!" was the delicious reply.

A few moments after he said:

"I intended to have found that bracelet myself."

"It's all the same," she said, shyly smiling, "since I have found it."

Ten Fine Poems.

Professor Wallace Wood of Columbia University asked Edward Dowden, professor of English literature in Dublin University, to name ten of the greatest little classics in English poetry. Professor Dowden replied, saying: "I set down the names of ten poems which immediately present themselves to me as of high excellence. Were I to delay I should probably begin to institute comparisons, to be caught in a tangle of doubts and to alter my list."

The list is as follows:

1. Spencer's "Epithalamium."
2. Milton's "Lycidas."
3. Gray's "Elegy."
4. Shelley's "Ode to the West Wind."
5. Wordsworth's "Michael."
6. Coleridge's "France: an 'Ode.'"
7. Tennyson's "Ulysses."
8. Keats' "Ode to a Nightingale."
9. Browning's "Rabbi Ben Ezra."
10. Matthew Arnold's "The Scholar Gypsy."

Prof. Wood also invited the judgement of a number of other critics of eminence, asking them to name the best fifty poems in the English language. Richard Garnett, the retiring librarian of the British Museum; Norman Gale, poet and critic; Havelock Ellis, Hugh Walker, John H. Ingram, Mathilde Blind, Arthur C. Benson, Walter Whyte and Mackenzie Bell were those consulted. Havelock Ellis declined to submit a list because of the impermanence of his tastes in and judgement of poetry. The others all protest against any idea of finality or completeness in the choices indicated. Of the nine critics, eight include Keats' "Ode to a Nightingale" in their lists; six agree upon Coleridge's "Ancient Mariner" and six upon Shelley's "Ode to a Skylark." Coleridge's "Kubla Khan," Milton's "Il Penseroso," "L'Allegro" and "Lycidas," Shelley's "West Wind," Keats' "Grecian Urn," Gray's "Elegy," Tennyson's "Ulysses" and Wordsworth's "Intimations of Immortality" are in five of their lists.

February.

February, a form
Pale-vestured, wildly fair,
One of the North Wind's daughters
With icicles in her hair.

—Edgar Fawcett.

Acquiring a Competence.

"There are some men of genius," said Mr. Nippingly, "who accumulate great fortunes, by great strokes, but by far the greater number of fortunes, including those of moderate dimensions, and those form the great majority of all, are made by the very simple process of living within one's income and investing the surplus, with more or less wisdom, but always where it will be safe."

"The older I grow the more amazed I am that more people don't lay up a

Weak Children

How sad it is to see weak children—boys and girls who are pale and thin. They cannot enjoy the sports of childhood, neither are they able to profit by school life. They are indeed to be pitied. But there is hope for them.

Scott's Emulsion

has helped such children for over a quarter of a century.

Your doctor will tell you it is both food and medicine to them. They begin to pick up at once under its use. Their color improves, the flesh becomes more firm, the weight increases and all the full life and vigor of childhood returns again.

At all druggists; 50c. and \$1.00.
SCOTT & BOWNE, Chemists, New York.



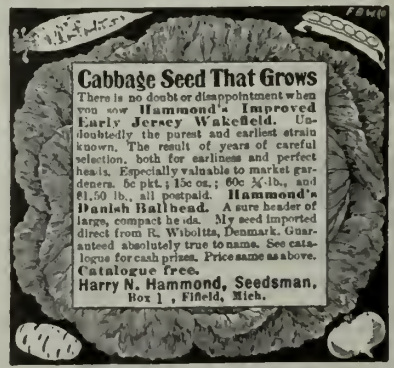
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competence for themselves, as most anybody can do, by beginning early in life to live within their income and sticking to that course faithfully. Did I do this myself? No! Am I, however having learned the wisdom of this course, now making a beginning? I am obliged to say, 'No, I am still spending all I get and laying by nothing.'

"There are some lessons that we all easily acquire, but never turn to our own advantage; one of these is of the benefits that arise from the exercise of self-denial. We get from this, at once, the direct benefit of what we save, and self-denial nourishes, strengthens and broadens the will, and enables a man constantly to do and to earn more and more.

"There's simply nothing like self-denial; it is the key to every one of life's treasures; and every body has one of those golden keys in his possession, eager to help him and waiting only for him to bring it into use."

Country-Bred Vs. City-Bred Boys.

In all time past there has been, and perhaps there always will be, considerable room for a wide comparison of the advantages obtained and exercised by the country-bred against the city-bred boy, writes Edwin G. Gill in the *Prairie Farmer*. It is a well known fact that a large majority of the most prominent men in all classes, both commercial and professional, who have figured in the history of the country, have been country boys who knew what it was to live the life of a country boy. But the knowledge and experience obtained by them in this rough, and sometimes disagreeable school of training, has stood them in good stead in the after years' work. The knowledge that Abraham Lincoln was once a farm boy and worked his way up by persistent effort, has doubtless been a proper incentive that has spurred many a boy on to better things when his immediate prospects were anything but bright. While it would be useless for all country boys to aspire to the position obtained by Abraham Lincoln, they can at least make the most of their opportunities and be an honor to the neighborhood in which they live; doing the duty that lies nearest before looking higher, which, by the way, is as great a thing as any man has yet done. The greatest difference between the city-bred and the country-bred boy seems to be in the matter of school advantages, but this is not as great as is often thought. While the city boy may have a little better chance to attend school at an earlier age, with longer terms and possibly a little better school system, the gain in the assimilation of book learning at this early age is more than counteracted by the more robust constitution so easily and most generally obtained by the country boy in his more unrestricted and active out-door life, which is a better armor than anything else in the great battle of life. And if a higher education is desired, as it should be, the present condition of the country is such that the high school and college opportunities are easily reached, and when the country youth is once enrolled his strong mind, backed up by a strong body makes his success sure.

Hot Water as a Remedy.

Headache almost always yields to the simultaneous application of hot water to the feet and back of the neck.

A towel folded, dipped in hot water, wrung out quickly and applied over the stomach, acts like magic in cases of colic.

A towel folded several times and dipped in hot water, quickly wrung out, and applied over the seat of pain, will in most cases, promptly relieve toothache and neuralgia.

A strip of flannel or towel folded several times lengthwise and dipped in hot water, then slightly wrung out and applied about the neck of a child suffering with an acute attack of croup, will usually relieve the sufferer in the course of ten minutes if the flannel is kept hot.

Hot water, if taken freely a half

hour before bedtime, is one of the best possible cathartics in severe cases of constipation, while it has a most soothing effect upon the stomach and bowels.

There is no domestic remedy that so promptly cuts short congestion of the lungs, sore throat or rheumatism as will hot water, when applied promptly and thoroughly.—*Journal of Health*.

Women's Most Winsome Age.

Why do women hesitate to tell their age? By common consent it is regarded as very rude and boorish to ask a woman a categorical question regarding the number of her birthdays. Yet there should be no diffidence on the point, and reticence upon the subject is hard to explain. Except for some reason connected with business, which may find in accumulating years a handicap, a man is usually very open about his age, and as ready to proclaim it as his wife and his sister are to conceal theirs. Probably the feeling in the matter had its origin in the long ago, when matrimony was the ordinary woman's only desirable goal, and when, as she grew older, her chances of finding a mate diminished perceptibly. The situation has so entirely changed, and spinsterhood has become so inviting, that we should expect to discover an alteration in the manners of women on this point, and to find them quite candid as to their claims to maturity or the reverse.

Fifty years to-day looks as forty did a score of years ago. Thirty, always a very winsome age, the age of woman's most captivating beauty, is not now to be distinguished in freshness and bloom from twenty-five. Outdoor life is doing for women what nothing else can do, making them beautiful, and keeping them young.—Margaret E. Sangster.

A Chicago hotel manager employed a man named "Bill" to do his window washing. One morning Bill was amusing himself by reading the paper; and, as bad luck would have it, the manager looked in. "What's this?" he said. "Pack up your things, and go," said the manager. So poor Bill drew his money, went upstairs, and put on his good clothes. Coming down, he happened to run across the manager, who did not recognize him in his black coat. "Do you want a job?" asked the manager. "Yes, sir," said Bill. Can you clean windows?" "Yes, sir." "You look a handy sort of fellow. I gave the last man only \$5, but I'll give you \$7." "Thank you, sir," said Bill; and in half an hour he was back in the same old room,—cleaning the window this time, and not reading the paper.—*Collier's Weekly*.

"Yes, sir, I have come to ask you for the hand of your daughter."

"For Isabel's hand?"

"Yes, sir. It is a mere formality, I know, but we thought it would be more pleasing to you to have me go through with it."

"What's that? A mere formality?"

"That is what I said—a mere formality."

"And may I inquire who suggested that asking my consent to my daughter's marriage was only a mere formality?"

"It was Isabel's mother, sir."

"Oh! Then I have nothing more to say."—*Collier's Weekly*.

More things are wrought by prayer
Than this world dreams of. Wherefore
let thy voice

Rise like a fountain for me night and day,
For what are men better than sheep and
goats,

That nourish a blind life within the brain,
If, knowing God, they lift not hands of
prayer,

Both for themselves and those who call
them friend?

For so, the whole round world is every
way
Bound by gold chains about the feet of
God. —Tennyson.

And things can never go badly wrong,
If the heart be true and the love be strong,
For the mist, if it comes, and the weeping
rain
Will be changed by the love into sunshine
again. —George MacDonald.

DOMESTIC ECONOMY.

Hints to Housekeepers.

Salt placed in damp rooms will absorb the moisture.

A delicacy that is only now finding its way to exclusive tables is the preserved comquats which come to us from China. These are tiny oranges, preserved with the marvelous skill that only Chinese preserve makers attain, and are a delicious and novel sweet for dessert. They are packed in attractive little stone pots.

The nursery should always be provided with a bottle of good sweet oil; because if, at the very beginning of a cold, the chest and back and the lower part of the throat are rubbed with it the child gets a good night's rest, and that always acts favorably. A little oil put over the bridge of the nose prevents it from getting closed up and impeding the breathing.

Babies should not be taken out in thick fogs—the damp and smoke get into their little throats and chests, and make their eyes smart. In extremely frosty weather, with a north or east wind blowing and an absence of sun, babies ought not to go out. It is simply too bitterly cold for their delicate organization, and to expose them is to court croup and sore throat, if not bronchitis and inflammation of the lungs.

To the glass measuring cup of the pantry shelf is now added a new kind for the medicine closet. It is the usual tumbler size, with lines and figures on the side to indicate different fluid ounce measurements. It is provided with a cover in the form of a dial, upon which the hour for the next dose may be indicated. A pointer whose clamp projects over the rim, to serve as a spoon-holder, is movable, and is expected to be adjusted after each dose. The cover comes separately, and may be used for any glass, or, if not needed in that way, can serve as a stand for the medicine bottle.

MACAROONS.—Take the juice of half a lemon, the whites of three small eggs, one-half pound of ground almonds and one-half pound of sugar. Put the whites of eggs into a basin, add the sugar gradually and stir for some time till the mixture is perfectly smooth; then add the lemon juice and lastly the ground almonds. Mix thoroughly for about ten minutes; then lay out the mixture in little heaps on wafer paper, and bake on a flat tin in a very slow oven till of a light golden color. The heaps should not go flat like ordinary macaroons; and, when cold, they are not to be very crisp.

BROWN SUGAR FUDGE.—This, unlike many kinds of candy, must be stirred constantly while cooking; one pound brown sugar and one-half cup cold water. Let this boil until it becomes thick and creamy. Have some hickory nuts, walnuts or any nut with a decided flavor rolled to a powder, and stir into the candy just before removing it from the fire. This should also be cut into squares before it is quite cool.

I hear the tread of pioneers,
Of millions yet to be,
The first low wash of waves, where soon
Shall roll a human sea.
The rudiments of empire here
Are plastic yet, and warm;
The chaos of a mighty world
Is rounding into form. —Whittier.

We live in deeds, not years; in thoughts,
not breaths;
In feelings, not in figures on a dial.
We should count time by heart-throbs.
He most lives,
Who thinks most, feels the noblest, acts
the best. —Philip James Bailey.

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Hoarseness

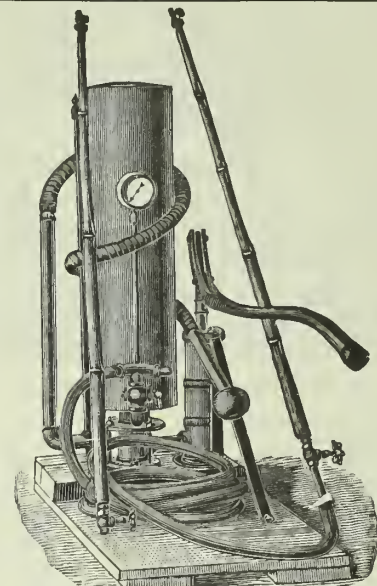
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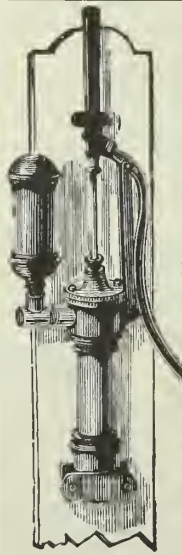
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Feb. 20, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	Feb.	May.
Wednesday.....	87 @—	68½@69
Thursday.....	67½@—	68½@69½
Friday.....	68½@—	68½@69½
Saturday.....	68½@—	68½@69½
Monday.....	68½@69½	68½@69½
Tuesday.....	68½@—	67½@68½

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	Mar.	May.
Wednesday.....	5s 10½d	5s 10½d
Thursday.....	5s 10½d	5s 10½d
Friday.....	5s 10½d	5s 10½d
Saturday.....	5s 10½d	5s 10 d
Monday.....	5s 10 d	5s 9½d
Tuesday.....	5s 10 d	5s 9½d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	1 02½@1 03½	1 08½@1 09
Friday.....	1 01½@1 01½	1 08½@1 07½
Saturday.....	1 01 @1 00½	1 07½@1 06½
Monday.....	99½@1 00½	1 06½@1 06½
Tuesday.....	99½@ 99½	1 09½@1 06½

WHEAT.

Immediately following last review, the market developed a weaker tone, from no well defined reason other than a decreased demand, particularly in the speculative field, where the weakness was most pronounced. As neither shippers nor millers care to have much wheat on hand on the first Monday in March, subject to taxation, they are naturally not inclined to operate heavily at this particular time. Shippers' purchases are almost wholly of wheat which they expect to have afloat before the Assessor gets around. Asking rates for spot wheat showed no material change, but to have effected free sales the acceptance of lower figures would have been necessary. At the close lower speculative markets East, rainy weather here, and tax time near, combined to make conditions decidedly unfavorable for unloading grain.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, \$1.02½@99½c.
December, 1900, delivery, \$1.09@1.06½.
Tuesday, at regular noon session of Call Board, May, 1900, wheat sold at 99½@99½c; December, 1900, \$1.06½@1.06½.
California Milling.....\$1 00 @1 05
Cal. No. 1 shipping, alongside.....98½@1 01½
Oregon Valley.....95 @1 02½
Walla Walla Blue Stem.....95 @1 05
Walla Walla Club.....85 @1 02½
Off qualities wheat.....82½@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	688½@689d	684½d@685d
Freight rates.....	25@27s	38½@41½s
Local market.....	\$1 12½@1 15	98½@1 01½

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Values remain notably in same position as at date of last report, but market cannot be termed firm at current figures, wholesale transactors being effected only at decided concessions to buyers. A full cargo of flour—23,500 barrels—was sent afloat the past week for the United Kingdom, being the first shipment of this sort to Europe for many months. The movement to Asia is much lighter than a few weeks ago, but is still of fair proportions.

Superfine, lower grades.....	\$2 40@2 60
Superfine, good to choice.....	2 65@2 90
Country grades, extras.....	3 00@3 25
Choice and extra choice.....	3 35@3 60
Fancy brands, jobbing.....	3 60@3 75
Oregon, Bakers' extra.....	3 00@3 40
Walla Walla, Bakers' extra.....	3 00@3 40

BARLEY.

The inquiry on local account was hardly so active as for a week or two preceding, and the tone of the market a little easier, but sales effected were at generally unchanged rates, or so close thereto as not to warrant any material alteration in quotations. There was little buying on European account, shippers finding it difficult to secure barley in noteworthy quantity where quality and price were to their suiting. Local millers have been lately forwarding on order to the Hawaiian Islands quantities of more than ordinary magnitude of crushed and whole food barley.

Feed, No. 1 to choice.....	75 @ 77½
Feed, fair to good.....	60 @ 72½

Brewing, No. 1 to choice.....	87½@ 97½
Chevalier, No. 1 to choice.....	1 00 @1 07½
Chevalier, No. 2.....	— @ —

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

Seller, 1900, new, —@—.
May, 1900, delivery, 72½@72c.
December, 1900, delivery, —@—c.

OATS.

Trade in this cereal has not been particularly brisk since last report, nor could the market be termed favorable to the selling interest. It was the exception where any undue pressure to realize was exerted, otherwise values would in all probability have receded to notably lower levels. To effect sales at full current rates was, however, rather difficult, even of best qualities.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 15 @ 1 22½
White, poor to fair.....	1 07½@1 12½
Gray, common to choice.....	1 10 @ 1 20
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 31
Black Russian.....	90 @1 02½
Red.....	95 @1 20

CORN.

In all essential respects the market shows virtually the same condition as a week ago. Stocks are not heavy and are principally Eastern Largo Yellow and White, although offerings of domestic are beginning to assume something like wholesale proportions. Small Yellow is in such light supply as to hardly justify a quotation.

Large White, good to choice.....	1 02½@1 05
Large Yellow.....	1 02½@1 05
Small Yellow.....	1 40 @1 45
Eastern Mixed.....	1 00 @1 02½

RYE.

Values are being tolerably well sustained at previously quoted range, but trading is of a light order.

Good to choice, new.....	1 02½@1 05
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BUCKWHEAT.

Offerings and demand are both light. In the absence of any noteworthy transactions, values remain nominally as before.

Good to choice.....	2 00 @2 10
Silverskin.....	— @ —

BEANS.

There have been no evidences of any special activity in the bean market during the current week, but there is no perceptible weakening of values and none likely to be experienced in the near future. Stocks are of very moderate volume, especially of desirable qualities, and are mostly in strong hands. Colored varieties have been lately receiving more attention than for some time past, and are in some instances being more firmly held. Red Kidneys are not obtainable in large quantities at any figure.

Pea, fair to good, 100 lbs.....	3 10 @3 35
Small White, good to choice.....	3 10 @3 25
Lady Washington.....	2 90 @3 10
Butter, small.....	3 75 @4 00
Butter, large.....	— @ —
Pinks.....	2 65 @2 85
Bayos, good to choice.....	3 25 @3 50
Reds.....	3 75 @4 00
Red Kidneys.....	4 00 @4 25
Limas, good to choice.....	5 00 @5 15
Black-eye Beans.....	4 50 @4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @2 75
Garbanzos, small.....	2 00 @2 25

Advices of late date by mail from New York City give the following report of the bean market, prices being per 60-pound bushel:

Neither the export nor jobbing trade for domestic beans has shown any improvement this week, and the competition with foreign stock has resulted in a weaker feeling on most varieties. Early in the week an export order for Marrow was filled at \$2.20 for average good quality, and plenty more are now offering at same price; a little very choice stock jobs at \$2.22½@2.25, but later begins to look extreme. Best foreign Marrow have sold at \$1.75@1.80 in bond. Domestic Medium and Pea are off about 2½@5c a bushel, and are hard to move in any quantity; best marks can now be bought easily at \$2.15, and it looks as if round lots would be shaded 2½; it is easy to buy choice bag stock at \$2.12½. Red Kidney have dragged heavily and holders did not hesitate to accept \$2.27½ for the few lots wanted by exporters. Less interest in White Kidney and choice stock difficult to place at \$2.60. Yellow Eye have also eased off a little, recent sales being in range of \$2.30@2.35. A few small lots of Turtle Soup have sold at \$2, but no quantity of stock could be moved at that. California Lima hold steady at about \$3.50, and there is a little trading in imported Giants. The quantity of the foreign beans is very irregular, many lots being quite unsatisfactory; a fair quantity of the best goods have been sold at \$1.97½@2.00 for Pea, and \$1.90@1.92½ generally for Medium, but second grade lots have sold at \$1.80@1.85, and

very inferior are offering considerably less without selling. Green and Scotch peas in light demand.

DRIED PEAS.

Market shows steadiness, with few offerings, especially of choice to select quality.

Green Peas, California.....	2 00 @2 15
Niles Peas.....	2 00 @2 15

WOOL.

Small shipments of scoured wool are going Eastward, principally to Boston via Canadian route, but beyond this there is nothing of consequence doing. The market is apt to remain quiet for a few weeks, or until the opening of the Spring season. The outlook continues first-class for a healthy market this year. The prospects are that wool will show as a whole very good condition and will be favored with prompt demand at very fair prices.

SPRING.

Oregon Eastern, choice.....	13 @16
Oregon Eastern, fair to good.....	11 @13
Oregon Valley.....	17 @20

FALL.

Humboldt and Mendocino.....	16 @17½
Middle Counties, defective.....	9 @12
Northern, free.....	11 @14
Northern, defective.....	9 @11
South Mountain.....	9 @11
San Joaquin Plains.....	— @ —
San Joaquin Lamb.....	— @ —

HOPS.

The market is lifeless and devoid of strength. Present offerings in this center are largely of quite ordinary qualities, for which there is little or no positive demand at any price. Choice to select might be placed at a slight advance on extreme quotation, but these are practically out of first hands.

Good to choice, 1899 crop..... 6 @ 9

The following review of the hop market from a New York authority comes through by recent mail:

Business has been rather slack this week and for the class of goods that comprise the bulk of the offerings prices have been weak, and in some cases lower. Statistically the position would seem to be stronger than it really is, and this is unquestionably due to the fact that the hops remaining unsold are mostly of inferior qualities. Brewers have been securing the best of the crop over since the new season opened, and it is being more and more difficult to interest them in the goods now generally shown. Further lots are going abroad, 900 bales arriving this week on direct consignment from the Pacific coast. Inquiries come to hand for fine stock, and if such was available more business would result, as the English markets have been stiffening a little of late. Our quotations cannot be changed materially, but the top figures look extreme because there are so few of such goods to be had. In the interior of this State but little business has been accomplished, but a good deal of trading is reported on the Pacific coast. Washington papers say that 3000 bales were sold there last week, and only 8000 bales left in growers' hands.

HAY AND STRAW.

There is no improvement to record in the condition of the hay market, and very poor prospects of there being any change for the better during the balance of the season. Buyers are in most instances taking hold in a very dilatory fashion, feeling confident that they are not losing anything by postponing purchasing as much as possible. A little extra select Wheat hay sells at an advance of about 50c per ton on extreme quotation below noted. Straw continues to be offered freely at easy figures.

Wheat.....	6 50@9 00
Wheat and Oat.....	6 50@8 50
Oat.....	6 00@7 50
Barley.....	5 00@7 00
Alfalfa.....	6 00@7 50
Stock.....	4 50@5 50
Compressed.....	6 50@9 50
Straw, ¾ bale.....	30 @ 45

MILLSTUFFS.

Much the same conditions prevailed as preceding week. Market was weak for Bran, easy for Shorts and Middlings, and fairly steady for Rolled Barley and Milled Corn.

Bran, ¾ ton.....	12 00@13 00
Middlings.....	15 00@18 00
Shorts, Oregon.....	12 50@15 00
Barley, Rolled.....	16 50@17 00
Cornmeal.....	23 00@23 50
Cracked Corn.....	24 00@24 50

SEEDS.

Trade in this department is insignificant, light stocks having as much to do with the inactivity prevailing as limited inquiry. Quotable rates remain nominally as previously noted for all kinds except Alfalfa, the latter being held at an advance.

	Per ctl.
Mustard, Trieste.....	3 25@3 50
Mustard, Yellow.....	4 50@4 75
Flax.....	2 00@2 25
	Per lb.
Canary.....	3½ @ 4
Rape.....	2 @ 3

Hemp.....	4 @ 4½
Timothy.....	4 @ 4½
Alfalfa, Utah.....	8 @ 9½

BAGS AND BAGGING.

The supply of Grain Bags for this coast the coming summer is estimated at 45,000,000, which is likely to prove ample for all needs. In this estimate San Quentin is credited with 3,000,000 and Walla Walla with 1,000,000. Carry-over stock is given at 5,500,000. Sailing vessels on the way from Calcutta have 13,500,000. Freight room in steamers has been engaged from Calcutta for 10,000,000. Private bag factories of the coast are expected to turn out 12,000,000. Nothing doing at present.

Calcutta Grain Bags, buyer June-July.....	6¼@—
Calcutta Grain Bags, spot.....	6¼@—
San Francisco Grain Bags, 22x36, spot.....	6¼@—
State Prison Bags, ¾ 100.....	5 65@—
Wool Sacks, 4 lbs.....	— @32½
Wool Sacks, 3½ lbs.....	— @28½
Fleece Twine.....	7½@—
Gunnies.....	— @12½
Bean Bags.....	4½ @ 5½
Fruit Sacks, cotton.....	6½ @ 7½

HIDES, PELTS AND TALLOW.

Stocks of Wet Salted Hides are accumulating and prices are tending downward. Dry Hides and Calf Skins are in fair demand at rates quoted. Pelts and Tallow are meeting with moderate sale at unchanged figures.

HONEY.

Market is slow at notably unchanged values. Stocks are not here to admit of any great activity in this line, neither is there much demand at full current rates, either for shipment or on local account.

Extracted, White Liquid.....	7½ @ 8
Extracted, Light Amber.....	7 @ 7½
Extracted, Amber.....	5 @ 5½
White Comb, 1 lb frames.....	11½ @12½
Amber Comb.....	8 @10

BEESWAX.

The amount of business is regulated by the quantity offering. There is no lack of demand for desirable qualities at prevailing rates.

Good to choice, light, ¾ lb.....	26 @27
Dark.....	24 @25

LIVE STOCK AND MEATS.

Beef of first quality is at present in better supply than second and third grades. Mutton is ruling steady, with offerings about sufficient for immediate requirements. Veal and Lamb met with custom at much the same figures as last quoted. Hog market was firm throughout, and was especially favorable to sellers for desirable packing stock.

Beef, first quality, dressed, net ¾ lb.....	6½ @ 7
Beef, second quality.....	6½ @ 7
Beef, third quality.....	6 @ —
Mutton—ewes, 7@7½c; wethers.....	7½ @ 8
Hogs, hard grain fed, medium.....	5½ @ 5½
Hogs, small, fat.....	5½ @ 5½
Hogs, large, hard.....	5½ @ —
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ 5½
Hogs, country dressed.....	5½ @ 6
Veal, small, ¾ lb.....	7 @ 9½
Veal, large, ¾ lb.....	7 @ 8
Lamb, spring, ¾ lb.....	11 @12½

POULTRY.

There was a surfeit of Turkeys during most of the week under review, both of Live and Dressed, offerings running largely to Gobblers, and market for this fowl was decidedly weak. Young Chickens were in light receipt and brought good prices, especially Broilers and Fryers. Old Chickens in fine condition were favored with fair custom, as were also Ducks and Geese. Young Pigeons met with a fair market; demand for Old was rather slow.

Turkeys, dressed, ¾ lb.....	11 @ 13
Turkeys, live hens, ¾ lb.....	11 @ 12½
Turkeys, live gobblers, ¾ lb.....	9 @ 11
Hens, California, ¾ dozen.....	4 00 @5 50
Roosters, old.....	4 50 @5 00
Roosters, young (full-grown).....	5 50 @6 00
Fryers.....	5 50 @6 00
Broilers, large.....	5 00 @5 50
Broilers, small.....	3 50 @4 50
Ducks, ¾ dozen.....	4 00 @5 00
Geese, ¾ pair.....	1 75 @2 00
Goslings, ¾ pair.....	1 75 @2 00
Pigeons, old, ¾ dozen.....	1 25 @1 50
Pigeons, young.....	2 00 @2 50

BUTTER.

Prices for fresh have dropped to lower levels and demand is not very brisk at the decline. Stocks continue in excess of the inquiry at prevailing rates. Only by getting prices down to a point which will attract shipping and packing orders can the market be relieved of existing surplus and kept in healthy condition.

Creamery, extras, ¾ lb.....	23 @—
Creamery, firsts.....	22 @—
Creamery, seconds.....	21 @—
Dairy, select.....	21 @—
Dairy, seconds.....	17 @10
Dairy, soft and weedy.....	— @—
Mixed store.....	14 @16
Creamery in tubs.....	18 @21
Pickled Roll.....	— @—
Firkin, California, choice to select.....	19 @22
Firkin, common to fair.....	16 @18

CHEESE.

Market shows weakness, especially for new product, or offerings just a few weeks from the press, receivers of the same being

anxious to effect prompt sales and avoid loss by shrinkage, as also incidental expenses in carrying. Well-seasoned cheese of domestic product is held fairly steady. Eastern cheddars are scarce and high.

California, fancy flat, new.....	10 @—
California, good to choice.....	9 @ 9½
California, fair to good.....	8½ @ 9
California Cheddar.....	— @—
California, "Young Americas".....	9 @11

EGGS.

Increased arrivals and no corresponding increase in the demand have caused the market to rule quite unsatisfactory to the selling and producing interests. Prices have declined 1@2c. during the week, and it is evident that lower levels will be touched before there is any stability established. Cold storage eggs of last season are still upon the market in limited quantity.

California, select, large, white and fresh.	15	@—
California, select, irregular color & size.	14	@14½
California, good to choice store.....	13	@14
Eastern, as to section and grading.....	—	@—
Eastern, cold storage.....	10	@—

VEGETABLES.

Early spring vegetables were in fair receipt from Los Angeles section. Market for choice of most kinds showed firmness, with demand very fair. The tendency on summer squash and tomatoes was in favor of buyers. In the line of winter vegetables, onions ruled firm under light offerings of choice to select and a very fair demand.

Asparagus, ¢ lb.	10	@	20
Beans, String, ¢ lb.	8	@	10
Cabbage, choice garden, ¢ 100	40	@	—
Cauliflower, ¢ dozen	50	@	—
Cucumbers, hothouse, ¢ doz	2	00	@ 2 50
Egg Plant, ¢ lb	10	@	12½
Garlic, ¢ lb	5	@	—
Onions, Yellow, Cal., good to choice.	1	90	@ 2 15
Onions, Oregon, ¢ cental	2	00	@ 2 25
Peas, Sweet, garden, ¢ lb.	3	@	5
Peppers, Green Chile, ¢ lb	4	@	5
Peppers, Bell, ¢ lb	—	@	—
Rhubarb, ¢ lb	7½	@	12½
Squash, Marrowfat, ¢ ton	—	@	—
Squash, Summer, ¢ box	1	00	@ 1 25
Tomatoes, Los Angeles, ¢ box	1	00	@ 1 25
Tomatoes, Bay, ¢ box	—	@	—

POTATOES.

The market was rather easy in tone for most varieties, without any pronounced changes in quotable rates. There were tolerably heavy receipts from Oregon, 9600 sacks arriving per one steamer Monday. Offerings of table potatoes were mostly Burbanks. For seed stock, Garnet Chile and Early Rose were offered in sufficient quantity for the demand. Peerless remained in light supply. Sweeters were rather firmly held, with only moderate receipts.

Burbanks, River, # cental.....	75 @1 00
Burbanks, Bay counties, # cental.....	80 @1 05
Burbanks, Humboldt.....	90 @1 05
Burbanks, Oregon.....	70 @1 10
River Reds.....	— @ —
Burbanks, Salinas, # cental.....	— @ —
Early Rose.....	90 @1 00
Garnet Chile.....	90 @1 00
Peerless.....	1 20 @1 25
New Potatoes, # lb.....	2 @ 3
Sweet, River, # cental.....	— @ —
Sweet Merced.....	1 65 @2 00

The Fruit Market.

FRESH FRUITS.

The market for fresh apples is fully as firm as previously noted. Stocks of choice to select table fruit are decidedly light, and no trouble is experienced in realizing good prices for fruit of this description. Common to medium qualities are not plentiful, and while meeting with fair custom, will not command materially better prices than current during greater part of the season. These apples go mainly to heavy consumers, who can utilize them only at rather low figures. Strawberries were in evidence, but not in large quantity, and were mostly too poor to be sought after or to warrant quoting. Sales were reported as low as \$5 per chest for common, and not over \$10 for best offering.

Apples, fancy, 4-tier box.....	1 50 @1 75
Apples, good to choice, # 50-lb box.....	75 @1 25
Apples, common to fair, # 50-lb box.....	35 @ 50

DRIED FRUITS.

The market for cured and evaporated fruits continues quiet. About the only noteworthy change to record from the condition of previous week is that while then Prunes were the duldest on the list, they have since come to the front in the matter of inquiry and for several days past have been receiving more attention from buyers than any other fruit offering. Prices for Prunes have not improved, but market presents a healthier tone in consequence of buyers showing inclination to again take hold of the Prune in noteworthy fashion. The revival of inquiry is mainly in the East. Prices for all dried fruits remain quotably the same as a week ago. Any weakness which exists is confined principally to Peaches, Apples and Figs. The market is very lightly stocked

with Apricots and for this fruit inclines in favor of sellers.

EVAPORATED OR BLEACHED.	
Apricots, Royal, in sacks, # lb.....	10½ @12
Apricots, Royal, fancy.....	12½ @13
Apricots, Moorpark.....	13 @15
Apples, in 50-lb boxes, rings, pressed, fancy.....	7½ @—
Apples, 50-lb boxes, rings, pressed, good to choice.....	6 @ 7
Figs, White, fancy pressed.....	5½ @ 5½
Peaches, unpeeled, good to choice.....	6 @ 7
Peaches, unpeeled, fancy.....	7½ @ 8
Peaches, peeled, in boxes.....	12½ @15
Pears, unpeeled Bartlett, halved, fancy.....	9 @10
Pears, halved, unpeeled Bartlett.....	6½ @ 8
Pears, quartered, unpeeled Bartlett.....	6½ @ 7½
Plums, Black, pitted.....	6½ @ 7½
Plums, White and Red.....	7 @ 8
Prunes, in sacks 40-50s.....	4 @ 4½
50-60s.....	3½ @ 3½
60-70s.....	3½ @ 3½
70-80s.....	3½ @—
80-90s.....	3 @—
90-100s.....	2½ @—
110-130s.....	2 @—
Prunes in boxes, ¼c higher for 25-lb boxes, ¼c higher for 50-lb boxes.	
4 sizes Santa Claras and equal.....	2½ @—
4 sizes San Joaquin and Northern.....	2½ @ 2½
Prunes, Silver.....	4 @ 7

COMMON SUN-DRIED.	
Apples, sliced.....	4 @ 5
Apples, quartered.....	4 @ 5
Figs, Black.....	— @ 3
Figs, White.....	3 @ 3½
Peaches, unpeeled.....	5 @ 6

Advices by mail of recent date from New York City furnish the following review of the dried fruit market:

The market for evaporated apples has not shown much change this week. Strictly prime fruit has occasionally been held at 6½c and higher with small sales reported, but exporters have not been interested above 6½c and some sales reported at that figure; in fact some fruit barely prime has changed hands a fraction lower and common to very good stock is quoted from 5@6c. Choice and fancy have only a light jobbing demand and outside quotations are extreme. Some prime evaporated apples recently sold have been rejected owing to quality. Sun-dried apples have been in moderate supply but demand light and tone weak with outside quotations extreme. Chops continue dull and weak, and demand for cores and skins is light with outside quotations on both difficult to realize. Small fruits show no material change; raspberries and huckleberries are dull; blackberries firm; cherries held steady. California fruit has had a little better movement this week and tone is steady at about former range of prices. Prunes range mainly from 3½@6½c, though attractive 30s are held higher.

RAISINS.

Stocks are meeting with slow but steady reduction, principally through the filling of small orders from supplies in the hands of jobbers. Previously quoted rates, as given out by the Growers' Association, continue in force.

F. O. B. FRESNO DELIVERY.	
London Layers, 6-crown, # box.....	— @—
do do 5-crown, # box.....	— @—
do do 4-crown, # box.....	— @—
do do 3-crown, # box.....	1 60 @—
do do 2-crown, # box.....	1 50 @—
Valencia Layers, # 20-lb box.....	80 @1 00
(Usual advance for fractions.)	
Loose Muscatel, 3-crown.....	6¼ @—
Loose Muscatel, seedless.....	5 @—

Pacifics.—2-crown loose Muscatel, 5¼c; 3-crown, 6c; 4-crown, 6½c; seedless, 4¼c.
Orientals.—2-crown loose Muscatel, 4¼c; 3-crown, 5½c; 4-crown, 6c.
(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, # lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, # lb., 8¼c; choice, 7½c; standard, 6½c; prime, 5c. Unbleached, 5c.

Loose Valentinas.—Fancy, # lb., 5½c; choice, 4½c; standard, 3½c.

Valencia Clusters.—Fancy, # lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Although Oranges were in heavier receipt than for any previous week the current season, prices were tolerably well sustained at range last quoted, but for other than most select qualities the market could not be said to be firm. Asking prices for Lemons remained as last noted, but buyers did not take hold freely at full current rates. Limes were steadily held, with supplies slim and in few hands.

Oranges—Navels, # box.....	1 25 @2 50
California Seedlings.....	60 @1 00
California Mandarin, # small box.....	— @—
Grape Fruit, # box.....	— @—
Lemons—California, select, # box.....	2 25 @2 50
California, good to choice.....	1 75 @2 00
California common to fair.....	1 00 @1 50
Limes—Mexican, # box.....	5 00 @5 50
California, small box.....	50 @1 25

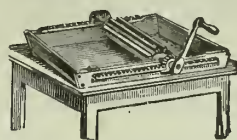
NUTS.

Nothing of consequence doing in either Almonds or Walnuts. If offerings were crowded to sale, current quotations could not be realized. Fortunately, offerings

R. Hall's Pulmonary Balsam,
For COUGHS and COLDS.

J. R. GATES & CO., Druggists,
417 Sansome St., San Francisco.

Alpha Baby Separators,
SEE HOW THEY GROW!



New
20th
Century
Styles.

INCREASED CAPACITIES.



BABY NO. 1, \$100;
325 lbs. per hour.
BABY NO. 2, \$125;
450 lbs. per hour.
BABY NO. 3, \$200;
850 lbs. per hour.
Dairy Turbine,
850 lbs., \$225.

ALL MODERN MACHINERY.



CHURNS,
WORKERS,
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TESTERS,
CANS,
BRUSHES,
FEEDERS,
WEANERS,
ETC.

G. G. WICKSON & CO.,
34 & 36 MAIN ST., S. F.

are light. Peanut market is moderately firm, with slim stocks.

California Almonds, shelled.....	15 @17
California Almonds, paper shell, # lb.....	10 @11
California Almonds, soft shell.....	8 @ 9
California Almonds, hard shell.....	5 @ 6
Walnuts, White, soft shell.....	10 @11
Walnuts, White, California, standard.....	9 @10
Chestnuts, California Italian.....	9 @10
Peanuts, California, fair to prime.....	4½ @ 5½
Peanuts, Eastern, hand-picked.....	6 @ 6½
Pine Nuts.....	5 @ 6

WINE.

The wine market is at present very quiet, and is neither favorable for the exertion of selling pressure nor for dealers dictating low prices. The latter are not making any special efforts to purchase dry wines, waiting for producers to come to them. The light crop, however, and the general good quality of the last vintage operate against the establishing of low prices. The quotable range for 1899 dry wines remains at 15@19c per gallon, San Francisco delivery. To secure strictly choice, buyers find it necessary to pay an advance of fully a cent on top figure quoted. There is not much obtainable at the lower quotation, and none which could be from a commercial standpoint termed good. The sweet wines produced in this State in 1899 have been already practically closed out, all the Fresno product having been sold at 30c per gallon, f. o. b. cars, storage to be given until April.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks.....	162,475	3,854,813
Wheat, centals.....	367,150	3,575,221
Barley, centals.....	63,916	4,265,794
Oats, centals.....	8,525	606,898
Corn, centals.....	650	93,754
Rye, centals.....	330	89,060
Beans, sacks.....	2,496	317,708
Potatoes, sacks.....	29,721	879,995
Onions, sacks.....	3,299	131,277
Hay, tons.....	3,064	112,461
Wool, bales.....	160	35,837
Hops, bales.....	86	8,936

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks.....	227,084	2,574,003
Wheat, centals.....	374,070	3,089,012
Barley, centals.....	102,916	3,453,754
Oats, centals.....	1,458	30,172
Corn, centals.....	330	12,266
Beans, sacks.....	512	20,010
Hay, bales.....	7,403	83,454
Wool, pounds.....	26,821	3,884,798
Hops, pounds.....	3,952	889,057
Honey, cases.....	23	3,276
Potatoes, packages.....	587	54,012

California Dried Fruit at New York.

NEW YORK, Feb. 20.—California dried fruits: Business of light order. Evaporated apples, common, 5@6c; prime wire tray, 6½@6½c; choice, 7@7½c; fancy, 8@8½c.
Prunes, 3½@6c.
Apricots, Royal, 13@15c; Moorpark, 15@18c
Peaches, unpeeled, 7½@9c; peeled, 18@22c.



FROM the Electric Wheel Co. of Quincy, Ill., is received a more than ordinarily fine trade treatise on the important subject of wheel and wagon construction. There is considerable practical information in this catalogue, and some tables and prices that would come handy. The question of a wagon and a wheel brings up the question of economy, and is an important one. The Electric Wheel Co., Quincy, Ill., will send this catalogue free to any one asking for it.

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KELLER'S NURSERIES,
Depot, 902 Broadway, OAKLAND, CAL.
ORNAMENTAL PLANTS AND SHADE TREES.
20,000 Gum Trees, 12 to 18 inches high,
at \$10.00 per 1000.
CHOICE ROSES, Strong Plants, \$2.40 per dozen.
SEND FOR PRICE LIST.

MOORE, FERGUSON & CO.
WOOL, GRAIN, FLOUR

—AND—
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Members of the San Francisco Produce Exchange.

Personal attention given to sales and liberal advances made on consignments at low rates of interest.

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BECAUSE they are made on correct principles, therefore give the best results. The Menzel Hardware Co. of Santa Clara, Cal., state that "they have put up a large number of pumps of all kinds this season, but yours give us and our customers the best satisfaction."
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Carriage Tops, Lazy Backs,
Canopy Tops, Storm Aprons,
Wagon Tops, Dust Hoods,
Dashers, Fenders.

Old Tops, Dashers and Fenders re-covered if sent to us. We sell Trimming Material of all kinds, also Top Dressing, Chamolis Skins, Sponges, etc. Write for Prices and How to Measure. CALIFORNIA TOP CO., 222 Mission Street, San Francisco, Cal.



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88 Beverly St., Boston, Mass.
Beware of all so-called Elixirs.
None genuine but Tuttle's.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING FEB. 6, 1900.

- 643,037.—CUT GRAIN CARRIER—Henry Bryan, Modesto, Cal.
643,040.—SCREW HOLDER—Carvin & Bourland, Valley Springs, Cal.
643,096.—SAVING GOLD, ETC.—S. B. Christy, Berkeley, Cal.
642,785.—ROTARY ENGINE—J. Craig, Highland Springs, Cal.
642,681.—CAN HEADING MACHINE—W. F. Davis, S. F.
642,968.—LIQUID RAISER—R. W. Elliott, Oakley, Cal.
642,791.—ANIMAL EXTERMINATOR—J. T. Gray, Hollister, Cal.
642,747.—DUST PREVENTER—J. Kullman, Benicia, Cal.
642,616.—COOKER—C. O. Lee, So. Tacoma, Wash.
642,798.—TEACUPS—A. E. Macdonald, S. F.
642,706.—GAS ENGINE—A. L. Navone, Calistoga, Cal.
642,853.—HYDRAULIC GIANT—J. P. Simmons, S. F.
642,638.—BASKET BAT—A. B. Smith, Los Angeles, Cal.
642,639.—PLAYING BALL—A. B. Smith, Los Angeles, Cal.
673,013.—REFRIGERATER—J. C. Stuart, Puyallup, Wash.
642,936.—POWER TRANSMITTER—F. C. Thompson, Burton, Wash.
643,016.—BICYCLE RACK—W. Thum, Pasadena, Cal.
643,075.—WATER VALVE—J. W. Van Brocklin, Seattle, Wash.
643,076.—WATER VALVE—J. W. Van Brocklin, Seattle, Wash.
642,735.—DRAFT EQUALIZER—F. G. Vestal, Pleasant Grove, Cal.
32,194.—DESIGN—C. A. Conger, Oakland, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

GAS ENGINE.—A. L. Navone, Calistoga, Cal. No. 642,706. Dated Feb. 6, 1900. This invention relates to improvements in what are known as gas or explosive engines. It consists of a cylinder closed at both ends with a piston, piston rod and connections by which the reciprocation of the piston is communicated to the mechanism to be driven. In conjunction with this piston moving from end to end of the cylinder are ports so arranged that there is a centrally located exhaust port and gas supply passages at each end of the cylinder, with inwardly opening spring-closed poppet valves and pipes connecting said openings and valves with a centrally disposed slide valve. A carburetor or gas supply is connected with the slide valve chamber, and means for reciprocating the valve so as to alternately admit the explosive gas to opposite ends of the cylinder at the instant when the piston has passed the exhaust port to allow the waste products of the former explosion to escape. This practically makes the engine double acting with a single cylinder. In

conjunction with this is an air-forcing mechanism by which the explosive vapor and air are forced through the valve ports and connecting passages when opened so as to charge the cylinder by direct pressure at the instant of the closing of the exhaust passage.

AUTOMATIC CAN HEADING MACHINE.

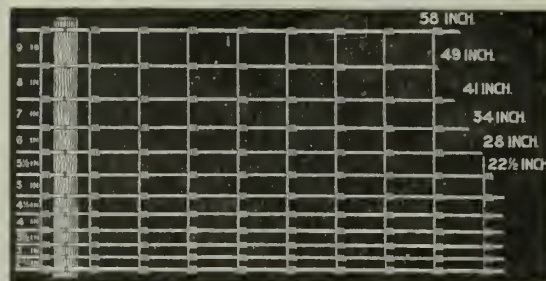
—W. F. Davis, San Francisco, Cal., assignor of one-half to J. Lee, Jr., same place. No. 642,681. Dated Feb. 6, 1900. The object of this invention is to place the heads upon the ends of sheet metal cans and assemble the incomplete parts preliminary to the final fitting of the heads upon the bodies, this being done without any special sizing of the bodies or fitting the heads thereto. It also comprises a means for applying and retaining the heads in contact with the main bodies until by the advance of the heading apparatus the bodies of the cans thus held are delivered into a supplemental crimping apparatus by which the heads are subsequently crimped and fixed upon the can bodies. The machine which embodies this invention comprises a series of journal disks, spiders or other carriers, each having a set of fixed segmental jaws, and so journaled with relation to each other and so driven by operating mechanism that pairs of segments upon the respective spiders will always be brought together so as to partially enclose a can body while the can heads are brought into contact and forced upon the ends of the can bodies. After this has been effected, the bodies having the heads in place are guided and delivered into a crimping machine which finishes the operation.

DRAFT EQUALIZER.—F. J. Vestal, Pleasant Grove, Cal. No. 642,735. Dated Feb. 6, 1900. This invention relates to a means for equalizing the draft and the application of power of large teams when applied for hauling harvesters, plows or other heavy machinery. In driving large teams composed of many draft animals, it is very difficult to equalize the power so that all the animals will have an equal amount of work, and this invention is designed to produce such equalization. It consists of draft bars to which the different series composing the team are so connected that the pull between part of the team counteracts the pull of the other. The equalizer bars are connected by chains which pass over pulleys so that the forward bar is connected with the second bar by, for instance, a single chain passing over a pulley, and a chain connects this pulley with another compound pulley device which connects with the third bar and with the implement or machine to be hauled and so on, each added team necessitating an additional pulley device.

TEA MAKING ATTACHMENT FOR CUPS.—A. E. Macdonald, San Francisco, Cal. No. 642,798. Dated Feb. 6, 1900. This invention relates to a device which is designed for use with tea cups and for the purpose of making a single cup of tea. It comprises a cover having a central opening and an annular flange rising from its outer surface and surrounding said opening. A screen basket is fixed in the opening, and a cup having a flange is adapted to fit the flange of the cover. This cover being set upon the cup, the tea within the basket will be immersed in the hot water in the cup and the tea can be drawn of any desired strength. By removing the cover and reversing it the tea leaves will fall from the basket into the cup and remain there and may be used again for another cup.

DUST PREVENTER FOR ROTARY PULVERIZERS.—J. Kullman, Benicia, Cal. No. 642,747. Dated Feb. 6, 1900. This invention relates to an attachment for preventing the escape of dust from apparatus which is designed for crushing and pulverizing bark, bones, brick, or other like material. It consists of a cap applied upon the outside of the pulverizer case and having no external openings. Holes are made through the case opening into this cap, the cap being fixed upon the case just above the feed hopper. The action of the cap appears to be to check the currents of air which are produced by the revolving beaters within the case, and to prevent such action as will throw the dust out of the hopper opening of the case.

COMPOUND FOR EXTERMINATING BORING ANIMALS.—J. T. Gray, Hollister, Cal. No. 642,791. Dated Feb. 6, 1900. Boring animals, such as gophers, ground squirrels, etc., are a great pest to agriculture generally, and it is very desirable to discover some means by which they can be readily exterminated. This is effected by the present invention which consists of a compound of ingredients which will produce a suffocating vapor and this is applied to a suitable carrier which can be introduced into the burrow of the animal and ignited so as to form the suffocating fumes which will destroy the animal.



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Sold by our agents in your city. If no agent, write to us and we will solve your fencing burdens.

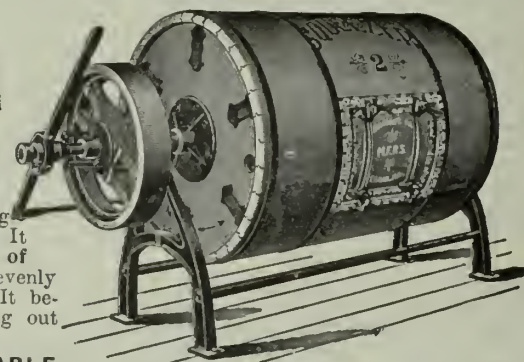
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No. 9. Low Frame.	Capacity	150 to 175 lbs.	\$50.00
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No. 7. High " "	" "	275 to 300 "	\$85.00
No. 6. " "	" "	350 to 400 "	\$100.00
No. 5. " "	" "	450 to 500 "	\$125.00
No. 3 1/2. " "	" "	650 to 700 "	\$165.00

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RED GUM TREES,
MONTEREY CYPRESS,
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SUGAR PRUNE,
Fine One-Year-Old Trees.
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Fruit and Ornamental Trees:
ORANGES, OLIVES, ROSES, ETC.

SEEDS:

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Citrus Fruit Trees.

The largest stock in the State of Citrus Fruit Trees. Trees from 25c up.
Tropical Fruit Plants of every sort. Catalogue Free.

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ROSSNEY PEAR.

Ripens two weeks after Bartlett; a large, very handsome pear of first quality; a strong grower, and productive.

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A new YELLOW FREESTONE, ripens with Alexander; very beautiful, and productive. Dormant buds in strong stocks.

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New varieties of plums of Luther Burbank's creation.

PLANTZ SEEDLING PLUM, a valuable new variety.

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A Full Line of Nursery Stock, Small Fruit Plants, Etc.

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FULL STOCK.
REASONABLE PRICES.

150 New Varieties.

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SAN FRANCISCO, CAL.

Two fine ARAUCARIA IMBRICATA, 9 ft. high.
ACACIAS, EUCALYPTUS, PINE, CYPRESS and SPRUCE TREES.

PEACH, ALMOND and CHERRY TREES.
A Full Line of EVERGREEN and SHADE TREES, FLOWERING and ORNAMENTAL SHRUBBERY.

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APPLE TREES.

All varieties and sizes. Also a full line of Cherries, Pears, Plums, Prunes, Peaches, Apricots, Ornamental Trees, Shrubs, etc. Originators of the Rossney Pear. Better than the Bartlett and ripens two weeks after that variety. All Rossney Pears go out under our seal. Write us for prices on your list of wants. No insects or diseases whatever.
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Fruit and Ornamental Trees,

ORANGES, OLIVES, GRAPES AND RESISTANT VINES,
PALMS, ROSES AND FLOWERING SHRUBS
IN GREAT VARIETY.

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TO THE EDITOR:—Through the Grange column of your valuable paper, I wish to reach the subordinate Granges throughout the State in order to furnish them topics for discussion and action at their regular monthly meetings; and especially now, while Congress is in session, it is advisable that the farmers of the State should bring their influence to bear on their national representatives in order to obtain legislation favorable to their interests. Farmers generally take less interest in legislation affecting their calling than the importance of such legislation seems to warrant. They have too generally conceded that their interest in securing legislation ended when they had nominated and elected men to represent them in Congress and that there was nothing more to do, whatever the inclination and probable action of their representatives might be. Farmers fail to realize that legislation affecting any interest is secured only by persistent work in convincing their representatives that the public good demands certain legislation. Members of Congress are not, as a rule, sufficiently familiar with all the interests of their constituents to be able to act intelligently, however sincere they may be, without evidence of their needs. Farmers have not only neglected to elect representatives thoroughly familiar with their wants, but they have been entirely too modest in letting those that were elected know what the great agricultural interests were entitled to in the matter of national legislation. The manufacturing and commercial classes have been active in this direction, while farmers have been indifferent.

This being the case, we suggest that every subordinate Grange in the State bring up for discussion matters of national legislation at one of its meetings in each month during this session of Congress, and follow up the discussion of each topic with a petition to Congress for legislation along the lines favored by the Grange. Of course, only questions of a non-partisan and non-sectarian character can be discussed and acted upon in the Grange. These petitions should be signed by members of the Grange and by other farmers who will aid in this matter and forwarded promptly to the Legislative Committee of the National Grange, 514 F street, Washington, D. C., where the committee will have all such petitions filed, indexed and properly presented to Congress. In addition to these petitions, individual letters may be written to Congressmen and Senators. Each member of the Grange and every farmer outside the organization can do something to aid in this matter.

TOPIC FOR FEBRUARY.—Should the Nicaragua Canal be exclusively built, owned and controlled by the United States Government?

We think a majority of the Grange members will answer the first question in the affirmative, as undoubtedly the American people are in favor of the abrogation of the Clayton-Bulwer treaty, whereby the United States is prevented from exclusively controlling or in any way fortifying the proposed canal. They are also undoubtedly not in favor of the ratification by the United States Senate of the recently negotiated Hay-Pauncefote treaty, because

such treaty contravenes the policy of the Monroe doctrine and re-establishes the Clayton-Bulwer treaty, considered by some long since lapsed, and now null and void, because it was a promise made without a consideration. However, we believe farmers should bring their influence to bear on Congress.

THE CURED FRUIT ASSOCIATION.—A matter of local importance to all members of the Grange who are fruit growers is the formation of a California Cured Fruit Association, with headquarters at San Jose. In order to perfect such association, it is necessary for 75% of the acreage to sign the contract prepared by the association before April 1st next. Meetings will be held in the various fruit-growing districts for the purpose of forming local associations to co-operate with the central one, and fruit growers should give this matter their careful consideration. The main point in any co-operative movement of this kind is to be sure of the men who manage the affair, for experience has shown that co-operation in buying and selling can not be successfully conducted except upon the most approved business methods and by men of the strictest integrity with special qualifications for the various departments in which they may be called to act. If the growers are satisfied on this point, and if other conditions are satisfactory, they should combine, by all means. If the buyers of our dried fruits can feel assured that the producers will not cut each other's throats, or rather prices (for it sometimes amounts to the same thing), but will maintain prices at a certain level during the season, they will buy our dried fruits at the price fixed by the association without fear of loss.

In your next issue I shall be pleased to present topics for discussion during the month of March.

J. S. TAYLOR, Lect. Cal. S. G.
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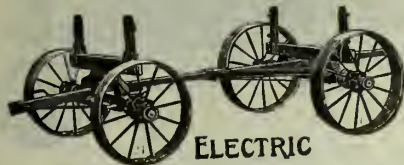
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Brewers' Grains Corncake.

To THE EDITOR:—When Inspector of the Board of Health of New York City, some years since, my district covered all the slaughter houses on the East River. I there found a large number of animals, sent long distances for New York City's meat supply, which were thin, poor, bruised and unfit for immediate slaughter. To meet an urgent demand for the quick improvement in the condition of these animals, an appetizing, digestible and readily assimilable food was necessary. In the stockyards "time is money," and a food of the above qualities was a sine qua non. A gentleman from St. Louis, and a New York chemist, showed me a combination of brewers' grains and cornmeal made into a bread by being steamed in a revolving drum. In appearance and taste it is like Boston brown bread. And, indeed, it is very like it in food value. But in expense it is but one-tenth. I carefully inspected the fresh, clean brewers' grains and the sound, sweet cornmeal, and put them into the drum, turned in the steam, applied the belt to drum and machine power, and in sixty minutes found the product, which I think I properly named "brewers' grains' corncake." I fed it to fowls, pigs, sheep, calves and cattle, and found it greedily eaten. I also fed it to my trotting Hambletonian stallion, which I kept for fast road driving, and found it better than oats. It greatly improved his coat, his spirits, his flesh and speed in eight or ten days. I attribute its slightly laxative property in part, at least, to this rapid improvement. The food elements of the grains and the cornmeal pre-digested by thorough mixing in a revolving steam drum, thus forming a rich, acceptable and nutritious food combination of exceeding cheapness, is the best kind of food for stale animals, for immediate improvement, awaiting slaughter for human food.

The utilization of by-products is a wise and practical economy that commends itself to the dairyman and feeder of meat animals. And as the supply of these foods must be supplied as near as possible to the centers of population, both of these food products from large cities—grains and cornmeal—are readily and cheaply obtainable, the deleterious long journeys of live stock can be thus avoided to a very considerable extent. Farmers within twenty-four or forty-eight hours of the great markets by rail can profitably tap the stock trains and in a few weeks can increase the weight and value of the meat animals and put money in their purses, and supply health and happiness to their city consumers.

Hoping that this crude hint to breeders and feeders of meat stock, and to dairymen, may be of some service, I leave it for a mature digestion of a subject of great value.

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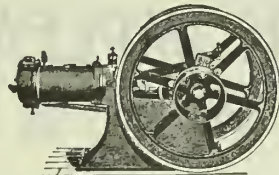
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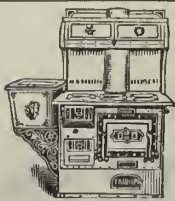
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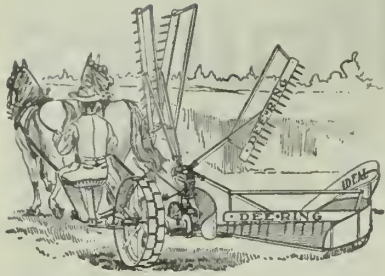
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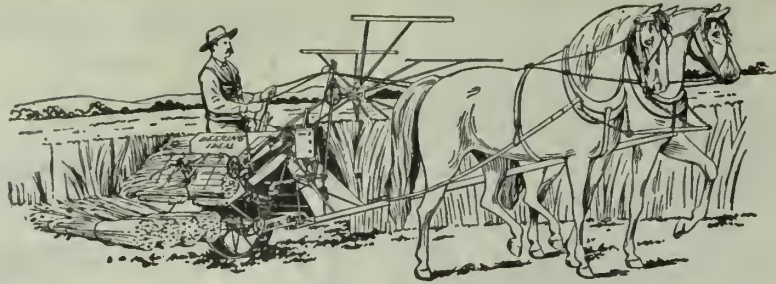


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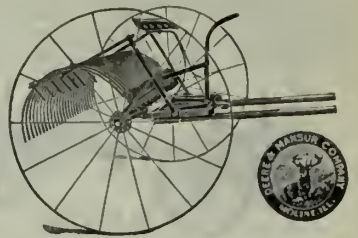
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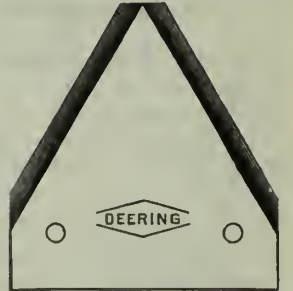
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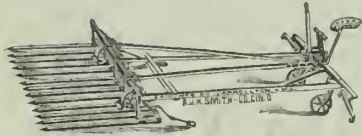


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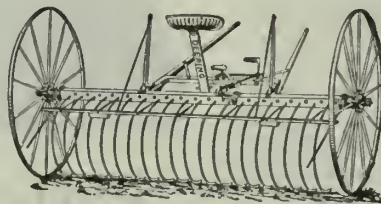
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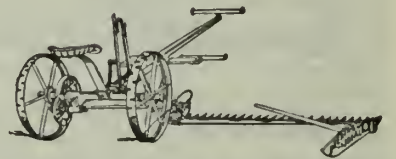
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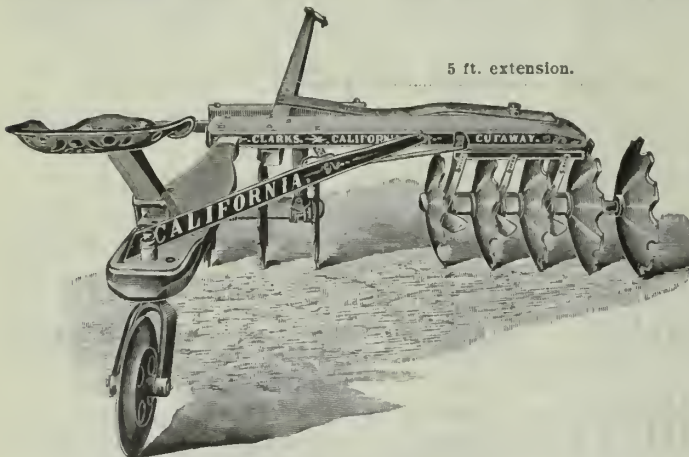
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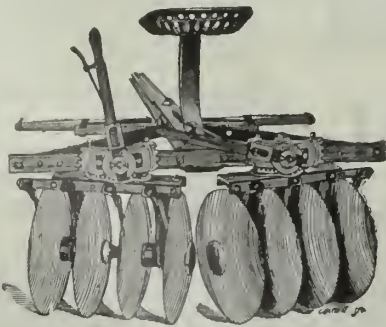
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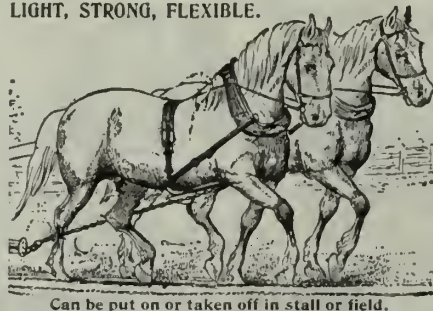
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 9.

SAN FRANCISCO, SATURDAY, MARCH 3, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

The Lemon Industry.

The development of lemon growing is one of the most interesting features of our horticultural progress. One who can look back over a quarter of a century of California pomology can recall nearly all phases of it, because though lemons were grown during the first half of our State life, they were practically worthless and counted almost for naught in the face of the imported fruit from the Mediterranean region. About 1875, however, there were a few in southern California who had faith in a California lemon and showed their faith by their works. Search was made everywhere for better varieties. Every fruit which seemed to promise acceptable qualities was most patiently and accurately tested. At all the earlier citrus fairs there were lemon-testing committees, composed of those who had given most attention to the subject, and hundreds of growers waited eagerly for their decisions upon strength of acid, absence of bitterness, thinness of rind, acceptable form, etc., and the result was that by their own tests and with the assistance of expert chemists a correct conception of a satisfactory market lemon was arrived at. The handling of the fruit to meet the seasonal demand comprised another phase of the industry which has been developed with the utmost energy and insight. The outcome of the whole matter is that the California lemon now acknowledges no superior and is making its way into all markets near and far, with a distant shipment of 1200 carloads a year. It is necessary to dismiss these considerations with a word, but to our older readers they will suggest volumes. The lemon has, graphically,

undergone a process of selection and there has come about a differentiation of the citrus fruit area, which in southern California carries the chief

lemon planting to the coast regions. It is not that there are not good lemons produced at interior points, but the more equable winter temperature better suits the rather tender lemon and the lower summer heat favors acid in the lemon, while it would not in equal degree favor sugar in the orange. For several years past therefore there has been a concentration of lemon planting along the southern coast in favoring places from Santa Barbara to San Diego. As illustrative of this region we have upon this page a handsome landscape, showing the greatest lemon region in California—Chula Vista, situated on the southeastern shore of San Diego bay, near the southern boundary line of the State. San Diego county claims to have now more than two-fifths of the whole lemon acreage of the State, with a total of about half a million trees. The fruit is chiefly grown near the coast, or a little farther inland, upon a number of large mesas or tablelands that are practically frostless. While the citrus in-

much water is needed as elsewhere. Within a radius of thirty miles of San Diego are thousands of acres of mesas and of foothill lands, also well adapted to lemon growing, and it seems probable that this is to be for all time to come, as it is now, the leading lemon-growing section of California, and, indeed, of

citric acid factory which is very completely equipped and backed by ample capital to demonstrate the possibilities of the industry as a way

to use up the waste product of the orchards profitably. The prospect is encouraging and there is every reason to hope for a successful outcome. The oil of lemon is also produced at this factory and is thought to be of superior quality to most of the imported article. While it is doubtful if the business will ever justify the payment of over \$5 per ton for cull lemons at the factory, still even that is a help, not only in the direct amount received but in keeping off the market a lot of low-grade fruit, which, while it yields little or nothing to the shipper, displaces just so much good fruit which could have been sold at a profit. The manufacture of cream of lemon and lemon soap illustrates another form of by-product which may probably be extended to considerable proportions. Another local product which promises well is preserved lemon juice. It is for use on ships, and as an antiscorbutic generally.

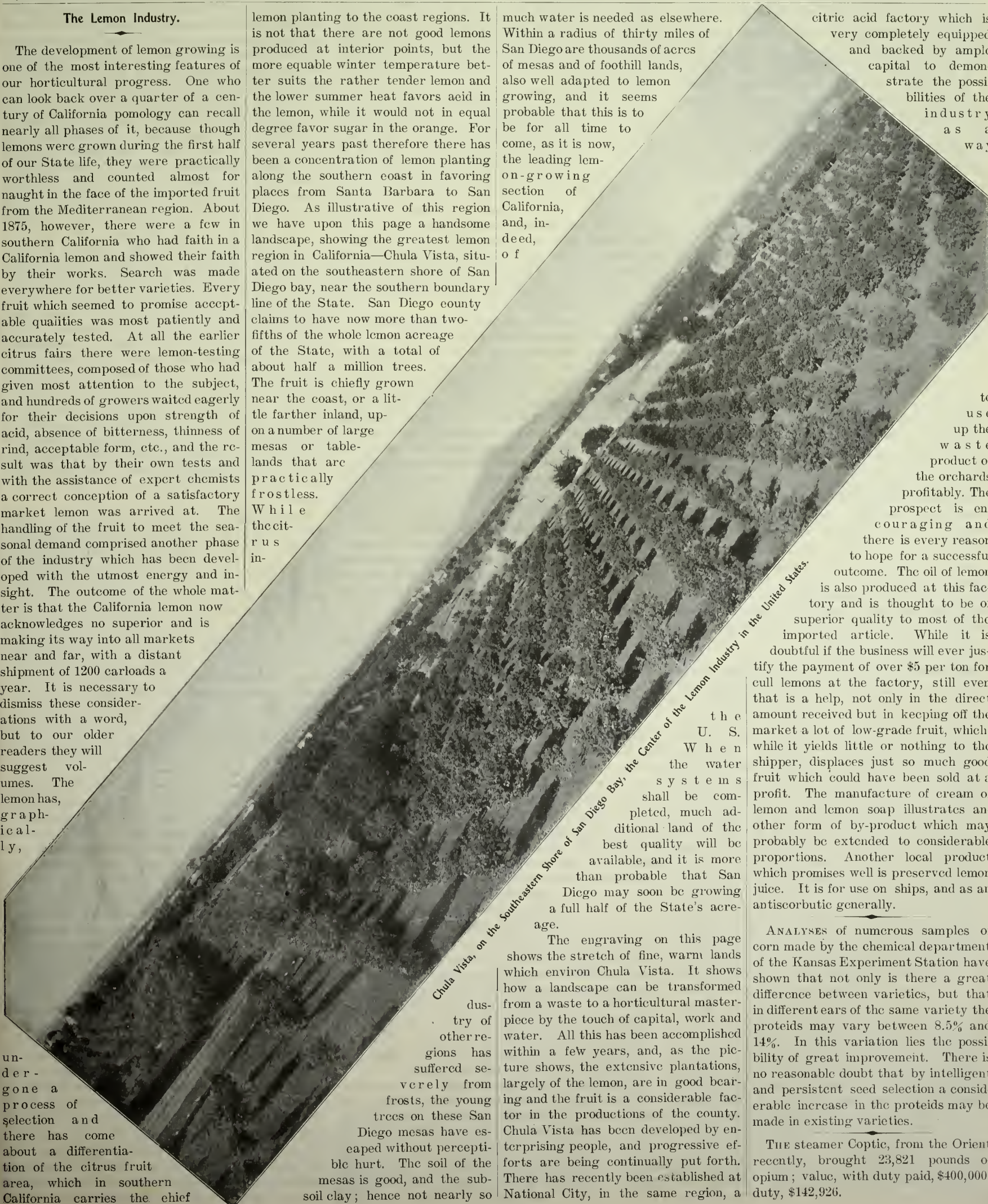
ANALYSES of numerous samples of corn made by the chemical department of the Kansas Experiment Station have shown that not only is there a great difference between varieties, but that in different ears of the same variety the proteids may vary between 8.5% and 14%. In this variation lies the possibility of great improvement. There is no reasonable doubt that by intelligent and persistent seed selection a considerable increase in the proteids may be made in existing varieties.

THE steamer Coptic, from the Orient recently, brought 23,821 pounds of opium; value, with duty paid, \$400,000; duty, \$142,926.

The engraving on this page shows the stretch of fine, warm lands which environ Chula Vista. It shows how a landscape can be transformed from a waste to a horticultural masterpiece by the touch of capital, work and water. All this has been accomplished within a few years, and, as the picture shows, the extensive plantations, largely of the lemon, are in good bearing and the fruit is a considerable factor in the productions of the county. Chula Vista has been developed by enterprising people, and progressive efforts are being continually put forth. There has recently been established at National City, in the same region, a

the U. S. When the water systems shall be completed, much additional land of the best quality will be available, and it is more than probable that San Diego may soon be growing a full half of the State's acreage.

dus-try of other regions has suffered severely from frosts, the young trees on these San Diego mesas have escaped without perceptible hurt. The soil of the mesas is good, and the sub-soil clay; hence not nearly so



Chula Vista, on the Southeastern Shore of San Diego Bay, the Center of the Lemon Industry in the United States.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, March 3, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Chula Vista, on the Southeastern Shore of San Diego Bay, the Center of the Lemon Industry in the United States, 129.
EDITORIAL.—The Lemon Industry, 129. The Week; Agricultural Education, 130.
QUERIES AND REPLIES.—Hardy Walnuts; An Orchard Inter-crop; A Hedge Rose; Columbian Awards for Apples; Polish of Wild Goose Wheat; Offspring from Incubator Fowls; French Varieties of the Walnut; Cankerworm Eggs; About the Breeds; Turkestan Alfalfa, 131.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending February 26, 1900, 131.
ENTOMOLOGICAL.—Fighting Insect Pests, 132.
THE VINEYARD.—The Almeria Grape in California, 132.
THE SWINE YARD.—Care and Management of Swine, 133.
FORESTRY.—Work of the Division of Forestry in Southern California, 133.
THE FIELD.—Unnecessary Steps on a Farm; Report on the Agricultural Capabilities of Alaska, 133.
THE DAIRY.—Outlook of Dairying in Oregon; Grass Trials in Humboldt County, 134.
AGRICULTURAL REVIEW.—135.
THE HOME CIRCLE.—The Children; A Belated Avowal: Care of the Eyes; The Meaning of the Thistle, 138. The Lessons of La Grippe; Tea and Coffee, 137.
DOMESTIC ECONOMY.—Parsnips at Their Best; How to Roast a Leg of Mutton, 137.
THE MARKETS.—Produce Market; Fruit Markets, 138-139.
PATRONS OF HUSBANDRY.—From the Worthy Master; Save the Big Trees; Elk Grove Grange; Tulare Grange, 142.
THE VETERINARIAN.—Answers by Dr. Creely—Treatment for Lameness; Tuberculin; Two Jaw Troubles, 143.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast In-ventors; Notices of Recent Patents, 141. Writers and Readers Both Pleased, 143.

The Week.

A little more rain would be very desirable everywhere and a great deal more is needed in some parts of the State. Our weather and crop review gives the special features of the situation. It is clear that we are to have rather moderate aggregates this year and good prices should be secured. The State will be free from accumulations before new crops can be harvested and this, too, should help values. February was the greatest wheat-shipping month since last July. All fruit products have gone out unusually, and with no reason to anticipate excessive yields prices should be maintained. It will be sad, however, for those who have little to sell this year, and exceptional fortitude will be required in the dry district, which is fortunately but a fraction of the area which suffered in 1898.

Spot wheat is held up by the free shipping movement and the dry weather. Futures drag in sympathy with lower range at Chicago and Liverpool. The dry winds also sustain barley prices, as holders are firm. Oats are quiet and unchanged. Corn is stiffer in sympathy with the Eastern situation. Hay drags along the same old way, but continued drouth would give it a lift. Bran is lower and other feeds unchanged, except that cracked corn and rolled barley are in sympathy with grain values. Beef and mutton are unchanged; hogs still have the advantage and have sold up to 6 cents in some cases. Butter, eggs and cheese are all on the down grade still, and, were it not for storing and the export trade, would go to the bottom. All poultry is firm, except turkeys. Young chickens have gone another point forward. There is apparently a very scant supply here and only old stuff comes from the East. Dried fruit has been very dull; peaches and apples going off half a cent. Prunes are steadily held; the organization now in process of formation is casting its shadow before. There are almost no fine apples in and they would sell high; meantime all apples are firm. Oranges are in large supply and a little lower, but a good demand has prevailed, which is helping greatly. Lemons are selling well in the scarcity of large lines, but are not higher. Beans are firm and Linas have gone up through poor crop prospects at the south. White beans are in good request for the East. There are too many poor potatoes and too few good ones, which sell very high, though the general potato situation is weak. Onions are firm and higher, with good ones quite scarce. Spring vegetables are generally lower, as receipts are increasing.

Agricultural Education.

After all, is it not becoming very clear that every line of agricultural advancement must proceed from wider knowledge and fuller understanding? Does not every real reform in the condition of the agriculturist, both in his own productive activity and in his relations with other activities and interests, depend for its realization upon more accurate knowledge and better trained reasoning and perception? Is it not a wonder, in view of what an agricultural producer does not fully and accurately know about his materials, conditions and environment, that he succeeds at all? Of course these questions could as reasonably be asked about people in other callings and professions, but we are not dealing with them nor suggesting any comparisons with them. Their deficiencies do not atone for ours, though they undoubtedly make ours more tolerable—but that is another question.

The more that is accomplished in agricultural progress, and certainly there is much, makes it plainer that though there is no royal road to knowledge there is a kingly path away from it, leading toward all points of advancement. All the short cuts toward the elevation of the agriculturist, socially, financially and politically, have yielded only disappointment and, too often, discouragement also. There have been efforts enough of this kind to show that, briefly speaking, it is learning that is needed rather than legislation: it is perception rather than political influence: it is wisdom which will win all that is desirable both in laws and positions, when all other preparations fail to attain them.

California experience during the last quarter of a century has furnished ample demonstration of the results of close investigation and hard thinking. Industries have been built up here with new materials, under new conditions, and the promoters have largely wrought out the opportunity and the demand which have made them profitable. Our fruit industries have developed new and characteristic practices befitting the climate, original methods of protection against invading pests and diseases, original methods and appliances for curing and preservation, and are now rapidly developing equitable and enterprising methods of marketing. Something like forty millions annual income to the State is the present measure of accomplishment. All this is the reward of wisdom. It is not the outcome of mere knowledge, because the knowledge itself had to be developed step by step as each line of mastery became essential to further progress. It is the work of the creative function of the human mind, which is inexpressibly higher than any accomplishment of the receptive faculties, which are its servants. It discloses the ability to see clearly and truly and to think logically and perseveringly. It is a triumph of education, and its testimony is valuable to us and to the world.

Our own industrial accomplishments are emphatic illustrations of the truth which the world is now coming to recognize as never before. Of course, the world's leaders have always known and enjoined it upon the people. It was left to this country as a priceless legacy from its foundation, for when Washington charged his followers to "educate the masses," he invoked the only agency by which the permanency of the republic could be secured. It is of universal application. The recognition of its applicability to agricultural progress has been deferred, but is now wide and clear. Agricultural education is now popular. Every agricultural school displays this fact in increased attendance and enlarged facilities; every intelligent and sincere agricultural publication feels the warmth of popular patronage and support; every educator of breadth and insight sees that the common schools must provide effectively and earnestly for training of the young along lines which minister to agricultural elevation and which promote appreciation of the opportunities in rural life. There are now discernible a spirit and a purpose in these matters which are new with this generation.

Agricultural education is accepted now as a statesman-like effort. During the last two decades special commissions in all civilized countries, charged to inquire into the conditions of the agricultural classes, have reached the same conclusions, viz., that while legislative reforms are essential, and they naturally differ in different nations, there is an underlying principle which is the same in all of them, and that is

that the advancement of agriculturists, in their own arts and in their relations to other elements of population, must be chiefly attained by systematic and liberal provision for agricultural education. This is the universal need and its demonstration, as the result of the fullest investigation and the ripest thought of those who can see most deeply into agricultural conditions, is indisputable. So important is the matter that it is no longer a plea for the agriculturist in his own behalf; it is a demand by statesmen in the interest of national strength and progress. The agriculturist need no longer feel that he is a clod by the roadside along which national pageants pursue their courses. He is borne aloft as the holder of the key of the world's well being. The victories of peace and war, the achievements of commerce, are largely dependent upon his success; in fact, the whole fabric of civilization must be woven from the materials which he must supply by acts of higher intelligence than have ever been required hitherto.

Take for example the British Empire, the greatest aggregation of peoples and property on the face of the earth. The Queen made a throne-speech the other day, in which agricultural reform and progress, based upon special effort for agricultural education, was prominently urged, and the fact that such a topic should be strongly urged while the welfare of the empire is calling for the deepest solicitude is very significant. At the same time with the speech of the Queen comes the report of a special committee appointed by Parliament, which urges comprehensive reforms in rural education in the United Kingdom, viz., that agricultural and rural education shall be placed in charge of a government department organized for this sole purpose; that in rural elementary schools there shall be a continuous course of elementary instruction; that traveling instructors shall be furnished; that provision shall be made for training teachers in agriculture and horticulture; that school and experiment farms shall be provided; that evening schools shall be supplied with agricultural instruction; that special publications to advance these ends be authorized. This is a scheme of agricultural education which places work where just now it is especially needed—and that is in the lower schools.

Great Britain is not a leader in this work. Other European governments have gone faster and farther, but the broad plan upon which it is proposed to work in England is very creditable. The United States leads the world in aids to agriculture along the higher educational lines; the need now is for the improvement of the lower schools to lead up to the agencies already provided. This cannot be long denied. The wonderful momentum which the movement for nature study is attaining will accomplish very much. Local schools of farm practice and agricultural high schools will ere long be provided. The speed with which desirable reforms are attained in this country will depend upon the way in which the farmers themselves support the educators who are working energetically in the desirable directions.

We rather expect to have a tussle with Siberia on wheat production, but we hardly expected our competitors would employ such astounding agencies as those with which they are now credited. We read in a London exchange that to carry wheat from Siberia a branch line of railway will run from the main line up to Archangel, a port on the north of Russia. The produce will be shipped thence to English northeastern ports. To keep the ice broken in the vicinity of Archangel one of the most remarkable ships ever designed has recently been built in England for the Russian authorities. "The fore part of the ship is of the best steel, and slopes forward, to permit of its being driven up onto the ice. Two powerful screws force the vessel forward, and another screw in front draws the water back from under the ice, producing a cavity, and so the weight of the fore part of the ship crushes down and breaks up the ice. On her way out from England this ship is credibly reported to have crushed through sheet and floe ice from 20 feet to 25 feet thick at the rate of nine miles an hour!" How a screw in front could draw the water back from under the ice while the vessel is on top of the ice floe we can't quite understand. And yet while our competitors are doing this Uncle Sam hesitates about digging a ditch in Central America to give us a short water route without any ice in it.

QUERIES AND REPLIES.

Hardy Walnuts.

TO THE EDITOR:—I have 100 almond trees that are eight years old and have never borne to amount to anything. They winter-kill some; then they put out their leaves so early that the late spring frosts kill the tender shoots. I would like to graft them over to the very best softshell, and I would like you to tell me what variety to graft on and where I can get the grafts.—H., San Diego county.

Our correspondent's place is in a small valley away from the coast, which accounts for the frost troubles. His chance of having satisfactory English walnuts lies in the use of the hardy French varieties, which are succeeding in central and northern California, where the ordinary southern California seedlings are not trustworthy. There is abundant testimony, as cited in the PACIFIC RURAL PRESS by Felix Gillet of Nevada City, that the ordinary seedlings are redeemed and made fruitful by grafting over to these varieties. They have not become generally popular at the south, because in the chief walnut region the other varieties will do well; but I. H. Cammack of Whittier, Los Angeles county, is a believer in the French varieties, or, at least, in some of them. Perhaps you can get scions from him. He is nearer to you than any other grower whose name now occurs to us.

A Hedge Rose.

TO THE EDITOR:—Please tell me through the columns of the PRESS the best variety of rose to make a hedge.—E. B. BEECHER, Auburn.

It is hardly possible to answer this question. It depends upon which color you prefer and then which variety of that color does best in your region. The best roses for one locality are not the best for another. For a hedge choose that rose which in your locality makes the best foliage. A thick, glossy leaf will catch less dust and is usually least liable to mildew. Pay more attention to the foliage than to the flower, for a mildewed hedge is a hundred times worse than a mildewed bush. By studying varieties now growing in your own locality you can make choice with least chance of disappointment.

Polish or Wild Goose Wheat.

TO THE EDITOR:—I want a hardier wheat, which will grow on high lands in mountain valleys, and be a sure crop. Will the Polish or Wild Goose wheat do?—MOUNTAIN FARMER, Plumas county.

Yes, this is a very hardy variety in the plant and hard and horny in the kernel. It is good for macaroni making, and we see by the consular reports that it is now in demand in Europe for this purpose. Probably the spelt line of the wheat family would also be satisfactory, as these are now making quite a record in the blizzard country of the northwest.

Columbian Awards for Apples.

TO THE EDITOR:—Can you inform me who received the first and second prizes for green fruit—say apples—at the Chicago Fair? How did the Watsonville apples stand?—FRUIT GROWER, Watsonville.

There were no first and second prizes awarded at the Columbian Fair. There was no competition; all exhibits which reached a certain grade were given the same prize, no matter whether there was one or a hundred. In the official list of awards which we have there were only two awards on apples. One was to the State of California for the apples in its collective exhibit, probably grown in many parts of the State; the other was to Lompoc valley. There is no mention of Watsonville in the list.

About the Breeds.

TO THE EDITOR:—What is known of the qualities of Holstein cattle in regard to their "rustling" capabilities, or adaptation to wild pastures or range grounds? How do they compare in this feature to Herefords, Durhams or Jerseys?—L. A. W., Toll House.

Modern dairying has no use for a rustling cow: it is the man who has to do the rustling to get the cow all she can eat so as to save her every unnecessary step. The Holsteins and Jerseys are both dairy breeds, and though either of them will endure a fair amount of deprivation as a ranch cow, they will both pay according to the treatment they receive. The Jersey is the smaller and is therefore better adapted to hill lands. The Herefords and Durhams are primarily beef stock and are not comparable with the dairy breeds mentioned above. They will both do well

under range conditions: common opinion is that the Hereford is the better rustler.

An Orchard Intercrop.

TO THE EDITOR:—We have a young apricot orchard, planted in 1899, trees 24 feet apart. The orchard is on the Mt. Hamilton side of our valley, near Evergreen. It has seemed that some crop might be grown with profit and without injury to the young trees on this place. Tomatoes would undoubtedly do well; but the place is not under irrigation, so tomatoes are out of the question.—READER, Lawrence.

You need plenty of moisture in the soil to make a good crop of broom corn. There must be a good free growth of the plant to be profitable, and if your land is not rather retentive of moisture, you had better not try it. The market value of the crop is subject to quite wide fluctuations as the local demand is limited. A good tomato crop can be grown with the same moisture which would be required for broom corn. By far the greater part of the tomato product is grown without irrigation. Start your plants at once and plant out as early as you can be safe from frost. If your land will not give moisture enough for tomatoes, you had better give it all to the trees. In fact, that is the better proposition generally with a tree that bears so young as the apricot.

French Varieties of the Walnut.

TO THE EDITOR:—In your issue of Feb. 17th you speak of the hardy French variety of walnuts as being the best for a frosty locality. What are the names of some of those varieties and from whom could I get some?—W. F. DUNCAN, San Juan, San Benito county.

We shall soon give pictures and notes on these varieties. They can now be furnished by most nurserymen.

Cankerworm Eggs.

TO THE EDITOR:—I send you a twig of French prune covered with some insect eggs. Will you please name them and also a remedy if they are destructive. I send all I found and never saw any like them before.—C. D. GUILFORD, Creston.

The eggs are laid by the moth of the cankerworm, which will soon make its presence known by the destruction of the foliage, if you have enough to do that. The only thing you can do now is to use paris green as the leaves appear. Next year you will have to begin in the fall and band the trees, to prevent the wingless moth from crawling up, which, owing to our warm winters, she is apt to do any time after December 1.

Offspring From Incubator Fowls.

TO THE EDITOR:—I have set my incubator with eggs laid by incubated hens. At time of second testing I find they have all died. I have been told that eggs of such hens do not hatch in incubators. Is this the case?—MRS. H. KLENN, Newman.

The statement is incorrect. The eggs from hens hatched in an incubator are capable of hatching as are any other eggs, if other things are equal. The reason your chicks have all died is because your incubator cooked them.

Turkestan Alfalfa.

TO THE EDITOR:—Will you kindly inform me where I can get some Turkestan alfalfa seed?

According to the letter recently published in our columns from Prof. Hansen, this variety has just been imported by the U. S. Department of Agriculture for trial. We do not suppose there is any seed to be had in this country this year.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, February 28, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Minimum Temperature for the Week.....	Maximum Temperature for the Week.....
Eureka.....	3.56	40.70	19.63	30.41	42	58
Red Bluff.....	.26	16.47	13.13	18.50	42	72
Sacramento.....	.7	13.89	7.85	14.24	42	66
San Francisco.....	.18	15.11	7.77	16.71	48	68
Fresno.....	.00	6.20	3.88	6.21	40	72
Independence.....	.00	2.12	1.15	4.39	34	70
San Luis Obispo.....	.00	12.57	7.15	13.75	38	80
Los Angeles.....	.00	4.57	2.98	12.58	44	84
San Diego.....	.00	2.64	3.76	7.18	48	76
Yuma.....	.00	0.75	1.34	2.54	40	84

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 26, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

Generally warm, pleasant weather has continued during the week, the temperature averaging considerably above the normal, and no damaging frosts have occurred. Light rain has fallen in the central and northern portions, and in some parts of the San Joaquin valley, while in Humboldt county the precipitation has been unusually heavy for the season. The rain was quite beneficial in some localities, reviving pasturage and grain and softening the soil. In the south, where the seasonal precipitation has been deficient, no rain has fallen during the week, and grain and pasturage are suffering greatly from lack of moisture, some localities reporting that the crops of wheat and barley will completely fail should the drouth continue much longer. A correspondent at San Diego reports that the seasonal rainfall to date has been less than in any season since 1876-77. In the great valleys and in most parts of the coast and bay regions grain prospects continue good, but would be greatly improved by early rain. Plowing and seeding are nearly completed, and it is now reported that the acreage sown to grain will not equal earlier expectations, owing to the lateness of the season, the soil having been too wet for working much of the time up to two weeks ago. Pasturage is still abundant, except in the south.

With the exception of pears all deciduous fruits are rapidly coming into bloom, and the trees are heavily laden. Good crops may be expected, if not injured by severe frosts or heavy winds. In some sections almonds are reported to be beyond danger from ordinary frosts. Citrus trees continue thrifty, but lemons were somewhat damaged by heavy winds on the 22nd.

SACRAMENTO VALLEY.

Warmer weather during the first part of the week was favorable for the growth of grain, but drying winds toward the close were somewhat injurious in some localities. The light showers were beneficial, to a certain extent, in giving new life to grain and pasturage. The soil is in good condition for cultivation, and seeding has progressed to such an extent that it may be said to be practically completed. The season is now so far advanced that further seeding is considered impracticable, and for this reason the acreage sown to grain in some sections will be less than that of last year. Conditions are still favorable for heavy crops, however. Fruit prospects continue good, and it is believed that nothing but killing frosts or unusually severe winds will prevent the yield of a large crop of all varieties of deciduous fruits. No damage has yet been done to fruits or to other crops, so far as reported, by either winds or frosts. Green feed was never more plentiful, and stock is in excellent condition.

COAST AND BAY SECTIONS.

The weather has been warm and pleasant most of the week, with light showers on the 20th, followed by occasional frosts which caused no damage. The rain was very beneficial in some sections, improving the condition of grain and pasturage. Some farmers have continued plowing and seeding, and this work is now nearly completed. Early-sown grain in most sections is still looking well, but the later sown needs rain soon. Beet planting has commenced. Nearly all deciduous fruit trees are in bloom, and the indications are that an unusually large crop will be gathered. In some localities it is reported that almonds are so far advanced as to be beyond injury by ordinary frosts.

SAN JOAQUIN VALLEY.

The weather was partly cloudy during the first part of the week, with scattering light showers Monday night and Tuesday, and generally clear and warm weather during the latter portion. The rains were generally too light to be of much benefit, yet in some localities they were sufficiently heavy to materially help the growing crops and pasturage. Occasional light frosts are reported, but they caused no damage. Crops of all kinds are looking well, especially the early sown. The late sown grain is somewhat backward owing to the lack of moisture. While no suffering is reported from lack of moisture, a good rain would greatly benefit all crops. Seeding is still progressing on the black lands in some localities where it was too wet to work in the early part of the season. Farmers are busy plowing summer-fallow. Work in the vineyards is about completed. Pasturage is good and sheep are doing well. The shipment of hay to Arizona from the upper portion of the valley is increasing. Almonds and apricots are in full bloom, and in some localities other fruit trees are beginning to blossom. With seasonable weather from now on, the prospects are favorable for fine crops of both grain and fruit.

SOUTHERN CALIFORNIA.

The temperature has been above the normal and no rain has fallen during the week. Dry northerly winds have prevailed, materially decreasing the prospects for grain and hay crops. All grain is suffering greatly from lack of moisture, and should the drought continue much longer it is feared the crop will be a complete failure. In some sections the rainfall to date has been less than in any season since 1876-7, and this deficiency is all the more marked because of the two preceding dry years. Deciduous fruit trees are rapidly attaining full bloom. In the vicinity of Santa Barbara lemons were considerably damaged by heavy winds on Thursday.

LOS ANGELES SUMMARY.—High, dry winds were hard on barley, wheat and pasturage. The week's weather had a marked effect on crops. Unless rain comes soon, little, if any, crops will be raised. Early sown grain about past redemption.

ENTOMOLOGICAL.

Fighting Insect Pests.

By EDW. M. EHRLHORN, Horticultural Commissioner, at Stanford University.

It was about twenty years ago when the fruit growers of California made their first real attempt at fighting insects. At that time the State was overrun by two serious scale insects, the cottony cushion scale (*Icerya purchasi*), which threatened the citrus industry and infested all kinds of other trees and plants, and the San Jose scale (*Aspidiotus perniciosus*), which threatened the deciduous orchards everywhere, especially in this valley. Thousands of dollars had been spent on all kinds of remedies for their eradication. Beautiful shade trees along our roads and streets were cut down, but every effort seemed to be in vain. The cottony cushion scale was finally conquered by its own enemy (*Vedalia cardinalis*), which was brought here from Australia after great expense in travels and research in its native land.

WASHES.—The San Jose scale, which is now considered a Japanese insect, was vigorously fought with all kinds of washes, and some were used which not only killed the scale but the tree also. One grower, being desperate, used his sheep dip, which, as luck would have it, was quite a success, and this was the basis of the celebrated lime, salt and sulphur wash of to-day. All this was a long struggle at a great expense. Finally we noticed that where trees had been abandoned great numbers of ladybugs were feeding on the scale and the trees began to look cleaner. It was also discovered by the closer observer that a small chalcid fly was assisting in eradicating this terrible enemy. Although these two insects kept the scale quite reduced, yet there was something else which suddenly attacked and completely eradicated it, so that to-day it is no longer a pest with us. We find it still on trees alongside of a dusty road.

Since these scales have practically disappeared others have come and are now giving trouble to the fruit grower. The one which is no doubt the toughest and hardest to fight is the black or olive scale (*Lecanium oleae*). This pest attacks evergreen and deciduous trees, and in fact every kind of plant. I have found it lately on mallows and morning glory which grew under infested trees. Very few enemies care to attack it, and although we find these doing some good work, yet on the whole we cannot say that we are satisfied with the results. We are, therefore, compelled to fight the scale by artificial means. In the citrus region fumigation with hydrocyanic acid gas is preferred to spraying, and although in other sections the let alone policy has been followed, to-day the pest has taken such a foothold again that considerable spraying is being done. Kerosene emulsion has given good results and now a crude oil wash is being tried. With its cousins, the brown apricot scale (*L. armeniacum*) and the frosted scale (*L. pruinosum*), it is a different story. Here the let alone policy does well, especially in Santa Clara county. We have here a chalcid fly (*Comys fusca*), which has practically cleaned the trees of scale, and we have found as high as 100% of the scales containing the parasite. Other sections have introduced it, but the time has been too short to know whether or not it is going to do for them what it has done for us. One more scale insect which is with us, and which is often taken for the San Jose scale, is the pear scale (*Diaspis pyricola*). It is found on pear, apple, peach and prune trees, and it is difficult for ladybugs to keep it in check owing to its habit of crawling under the moss and lichen on the trees, thus preventing the enemy from reaching it. In some instances we have removed these obstacles either by scraping the trunks and larger limbs or by spraying with one pound of caustic soda to six gallons of water. This wash will kill the moss and lichen with one application. In this way the ladybug has been able to cope with the scale, but in localities where these scale eaters are few in numbers spraying is absolutely necessary, and a crude oil wash has given the best results.

THE PEACH TREE BORER.—Aside from the scale insects we have numerous other pests, but paramount is the peach borer (*Sanninoidea opalescens*). This insect has been known as a pest in this valley since 1887, and all kinds of preventives, as well as the digging out method, have been used. Not until 1896 was anything found that would directly reach the borer in the tree. In this year a fruit grower tried carbon bisulphide with marvelous results, and his success spread like wildfire all over the country, and numbers of growers tried it; but it was the old story, "if one ounce is good two ounces are better," and either too much liquid was used or the party applying it was too careless to heed instructions given. The result was that quite a number of trees were killed. It was also observed that some of the liquid, although applied according to directions, failed to kill the borers, the reasons for which are as yet a puzzle to us all.

A few weeks ago I received a bulletin from Mr. Slingerland of the Cornell Experiment Station, en-

titled "The Peach Tree Borer," and I became deeply interested in the results of his work. The results of his labors coincide mostly with his experiments, except in the carbon bisulphide remedy, which he condemns; also our results with paper as a barrier have been better than his. With the carbon bisulphide we have had similar failures here, working on the same plan as they did, but we invariably find that when the soil is loosened around the tree, so that the fumes can quickly penetrate and reach the borers, good results have been obtained, providing good carbon bisulphide has been procured. In one instance reported by Mr. Slingerland the fumes were kept only one hour, in another instance five hours, around the tree. This is too short a time, for we have never found many killed under twenty-four hours—and better forty-eight hours—exposure. Another experiment they made with the McGowen injector, and the fumes were allowed to remain twenty-four hours without good results. We have not tried this last method here, and so cannot tell what the outcome would be. The best result they had was with a gas tar wash, put on the tree as a paint, without any injury to the trees. About four-fifths of the borers were kept out of the trees by this method. In this State we have always been warned against the use of gas tar in any form on the bark of trees, so that no experiments to speak of have been tried with it as yet.

I am especially pleased with Mr. Slingerland's concluding remarks: "Our experiments must lead to a much more rational and intelligent warfare against the peach tree borers. Peach growers will now 'know what not to do,' which is often equally as valuable and important as to know 'what to do.'" This means a great saving of money to the fruit grower, who will observe the experimenters' results, and not use that which have been proven useless. We are still experimenting with carbon-bisulphide and are also digging out borers and applying barriers, such as paper, lime and gas tar. What the future will bring forth we cannot as yet tell.

THE CODLING MOTH.—Another insect which troubles us is the codling moth (*Capocapsa pomonella*). Everyone knows this pest too well to go into detailed descriptions. We can keep our apples and pears quite free from worms if we spray in good season, and especially if we purchase good paris green. Most failures are generally traced to the poor quality of the paris green, which is sometimes very poor indeed.

A few insects which trouble us are several caterpillars, such as Forest-tent caterpillar, caterpillar of the Tussock moth, cutworms and cankerworms. These are generally fought by hand picking, poisoned baits, destroying the egg clusters and trapping. The wire mesh trap for capturing the wingless female of the cankerworm is a great success. This trap was invented by a fruit grower in this valley and is being used quite extensively to-day.

THE PHYLLOXERA.—In our vineyards we have two insects which cause great damage and death to the vines. Our vineyards are being killed off by the dreaded phylloxera, but, fortunately, the acreage is being rapidly replaced by new vineyards on resistant roots, which is the only safeguard against this vine enemy. It is a strong case of the survival of the fittest.

The insect is a native of our country and we find it on the native vines everywhere; still, the wild vine survives. How long it must have taken these vines to attain their resistance is beyond conception. The other insect which causes damage is the vinehopper, of which we have two species to contend with. We have as yet no satisfactory method of fighting these insects, and the methods which have been used are too laborious and expensive. It is claimed that green alfalfa placed on top of the vines in a Fresno vineyard kept the hoppers in check. This again is the invention of a grower, but there is room for further investigation and experiment. All this is being done to-day, and the question now is what can we do in the future?

FIELD FOR INVESTIGATION.—California, with its glorious climate, presents a great field for investigations. It is said that the United States have done more in economic entomology than any other country in the world, and it is also said that California has done more in practical entomology than any State in the Union. Why have we accomplished so much in California? Surely, not on account of systematic procedure or scientific investigations. We admit that some cases had scientific investigation, but the bulk of our success was obtained in a haphazard way, and all we may say is that the Lord was with us. There are numberless questions confronting us to-day and the following may interest most of us:

Why does carbon bisulphide injure some trees and not others?

Why is almond root more susceptible to injury by this liquid than other roots?

Why does some of the liquid kill borers while some of it does not kill them, when the same method of application is used?

What causes rootknot?

Why does the San Jose scale thrive on a dusty tree?

Why is the vinehopper more numerous in some seasons than in others?

Why does alfalfa placed on top of grapevines in

Fresno county apparently protect these vines from the attack of this hopper?

Why do fruit trees die after growing four or even eight years in places where black oak or sycamore trees have been taken out?

These and many other questions are puzzling us to-day. A few competent investigators in the field would soon determine all about carbon bisulphide and the peach tree borer, rootknot, the vinehopper, and, in fact, all our troubles would be worked up systematically. The life histories of all our pests would be cleared up, and this means half the fighting. A few years ago we noticed that the peach trees which were sprayed with the lime, salt and sulphur wash were not troubled with the peach twig borer (*Anarsia lineatella*). We did not know the reason for this at that time, but we do know the reason now. The young larvae hibernate in the bark of the crotches of the trees, and we can reach these minute larvae with a kerosene emulsion in winter time, so that we have this pest, at least, under complete control. It is on these lines that we should devote more time and money. Thousands of dollars have already been spent in a useless way, trying to cope with these pests for years. The time has come when the fruit grower must study these matters more carefully. He should endeavor to get acquainted with all the pests of his industry. If he finds an insect destroying his trees or crops, he should send a few specimens to some competent person for determination, who will also be able to give him a good remedy for it. If he finds insects which he is in doubt about whether they are beneficial or injurious, he should not kill them until he finds out all about them. Many instances have come to my knowledge where beneficial insects have been slaughtered for years by individuals who did not know that they were killing their best friends.

By all means encourage nature study in the public schools, especially in the rural districts. Objects are deeply impressed upon the mind, and the younger the observer the more lasting the impression. Names and descriptions are soon forgotten, but the color, form and structures of an insect are rarely forgotten. This, then, should be our aim. We should become closer observers to enable us to detect all things beneficial or injurious to our industry, and place these matters in the hands of competent investigators, who in a short time will be able to place reliable results before us, which will assist us in fighting our numerous pests.

THE VINEYARD.

The Almeria Grape in California.

F. T. Bioletti of the University Experiment Station gives the Pacific Bee an interesting letter on this Spanish grape and the peculiar trade in it, which has often been mentioned in our columns.

THE TRADE.—The south of Spain has long had a monopoly in providing the winter markets of England and the Eastern United States with grapes. In 1895 from the ports of Almeria and Malaga about 700,000 barrels of grapes were exported, valued at about \$3,000,000. Considerably more than half of these were sent to New York, London and Liverpool. The reason the Spanish have been able to retain this monopoly is because they are able to raise certain varieties of grapes which have peculiar keeping qualities. These qualities are a hard pulp which prevents them from drying up and a very strong attachment of the stalklet or pedicel to the grape. If a single grape is pulled off the bunch it generally breaks the attachment of the pedicel with the main stalk, the pedicel remaining attached to the grape by means of the strong brush of fibers which extend from the outside to the seeds.

THE GRAPE.—The best of these varieties in keeping qualities, and the one which is shipped in the largest quantities, is that which is called in California the Grape of Almeria. This grape was introduced into California nearly twenty years ago and widely distributed. Little was heard of it after this, as it failed to bear nearly everywhere, and in many places what little it bore failed to ripen. The cause of its failure to ripen was that it was planted in cool locations. It is suited only to hot locations similar to its native home in Andalusia. The cause of its failure to bear in hotter localities is illustrated by the experience of a vine grower in the great central valley. He had cultivated several rows of Almeria vines for many years without obtaining a single crop. One year, in disgust, he ceased to prune or cultivate the Almeria vine at all. The next year the vines were loaded with grapes.

ITS CULTURE.—The Almeria will not bear with short pruning nor regularly with ordinary long pruning. In Almeria it is grown on long stakes and with long canes. The best method in California appears to be, according to our experiments at the Tulare Station, to grow them on horizontal wires. The trunk or body of the vine should extend along the wire the whole distance between the vines and should be given a generous amount of bearing canes. With this method of training the vine bears well in suitable localities and locations.

PACKING.—Whether it would pay to grow these

grapes in competition with Spain is at present doubtful. The best packing material for keeping and shipping is the so-called "cork dust" which the Spanish shippers use. This consists of small lumps or chips of cork averaging about $\frac{1}{4}$ inch in diameter, and is such an excellent packing material because, while preventing too rapid evaporation and consequent drying of the grapes, it does not, owing to its coarseness, allow the accumulation of moisture on the surface of the grapes, which would cause them to become moldy. This material is too expensive in California to be used practically. Experiments have been made with various materials to find a substitute for cork dust. The most successful so far has been sawdust. Most sawdust, however, is too fine and keeps the grapes so moist that they soon decay. It is, besides, difficult to remove from the grapes, and so decreases their value. Most kinds of sawdust have a distinct and disagreeable flavor which is taken up by the grapes. The coarse redwood sawdust from the sawmills where they cut up the redwood logs is the best, but even this contains small particles which adhere to the grapes and a flavor which the grapes take up. A process has been invented and patented for screening out the small particles and removing all taste from this sawdust which promises to produce a packing material equal if not superior to cork dust.

Even if the difficulty of packing should be thus overcome, it still remains somewhat doubtful if the growing of the Almeria grapes would be profitable here, on account of the long railroad haul from here to New York, as the local market for grapes in winter and spring is extremely limited.

THE SWINE YARD.

Care and Management of Swine.

NUMBER II.—CONCLUDED.

By ELIAS GALLUP of Hanford at the University Farmers' Institute at Alta.

SELECTION OF THE SOW.—Though a sow be as handsome as a picture and charms the vision of all who look at her, she is nevertheless not a good brood sow unless she is a good milker. Farmers are inclined to select gilts as breeders by the eye—pretty, young, fat things whose lines were all lines of beauty. It is, perhaps, a misfortune that our present ideals as to what constitutes beauty in live stock are not very consistent with good milking qualities. The very short, chunky sow is rarely ever a good brood sow. Her litters are small and generally insufficiently nourished. When the weekly gains that a large litter of pigs ought to make is considered, some idea may be formed of the demands which the production of such gains make upon the dam, and of the extent to which it is essential that she should be a good milker. To secure sows of this kind the same methods are requisite as those employed to secure good milch cows. The essence of the method is selection. The gilts should be chosen from litters whose dams themselves have been good milkers.

There is, of course, no objection to good form in and of itself. Indeed, other things being equal, good form is to be preferred.

The brood sow is chosen for a purpose, that purpose being the fulfillment of the maternal office, and to this end that she should be a good milker is essential. It is not enough, however, to select well. Feeding is as important as selection. The proper frame, bone and form can be developed on green pasture, on foods in which barley, bran and shorts are predominant, with plenty of exercise for muscular development, and they can be attained in their highest form in no other way. Nature is wise enough not to spend time in developing milking capacity beyond the wants of the litter. It will then be seen that the sow that is a good milker must be built up from the foundation. Select, first, an inheritance in that direction, with vigorous and abounding health, and then feed along the line of nature as indicated.

Many dairy cows of strong milking inheritance, and that have been properly fed up to the milking period, are spoiled by bungling milkers. There is no danger of spoiling a brood sow. The pig before he is an hour old has mastered the science of milking, and has acquired greater proficiency than the most skillful dairyman in the country. That organized appetite which we call the young pig is thorough master of all the instructions ever given on the subject of milking. He milks quickly, thoroughly and gently, except when his rights are disputed. I will say that where it is convenient it is better to keep each sow and litter by themselves, as larger pigs steal from the smaller ones, and that makes a disturbance which the old sow tries to quiet, consequently the little fellows go for that time without their meal. A continued repetition of the above will soon dry the milk and your cake is dough with that litter. We all know that it is the sow's milk that makes the pigs fat, and the fat is fed onto the pigs through the sow.

WHAT BREED TO RAISE.—I have been breeding Poland-Chinas for over twenty years and am still in the business, and if I should recommend that breed some one might say that I was blowing my own horn.

I will say that the Berkshire and Poland-China are the two breeds preferred by a large majority of the farmers of this locality. The Chester Whites, Victorias and small Yorkshires would do well in this valley, but the farmers do not take kindly to the white breeds. The white hogs do not cross well with the common hog of the country, consequently the farmers ignore them. I would advise the breeders of swine to choose one breed and not be crossing from one breed to another. It is the custom of some to use Poland-Chinas one year, the next year use a Berkshire, afterwards use a Duroc Jersey. If you do that you will have a lot of hogs of as many colors as Joseph's coat. Uniformity of color as well as type makes better looking animals, consequently brings more money. We are not raising hogs for fun, but are raising them for money.

FILTH.—It seems strange that many will be so perverse as to argue that filth is not injurious to the hog; that it is his natural element and is more conducive to health than otherwise. Nevertheless nearly every neighborhood has some cranky member who maintains such a theory, and who practises it to the imminent danger of every herd in the radius of miles. It is needless to claim among men of intelligence that the hog is cleanly enough in his instincts, if given half a chance to exercise them, but, being forced to slothfulness by conditions at present surrounding him, it is not strange if he acquires filthy habits when encouraged in so doing. It tries one's patience to be compelled to argue in favor of cleanliness in this enlightened age when it is an open secret that filth is the maggot of disease; the infinitesimal life that preys upon its own foulness; that breeds without growth; that spreads like fermentation until it is a part of the very air and all that one eats and drinks. All this is known, and yet there are filth breeders who justify their calling. It is certainly no wonder that many people object to eating pork in any shape when we see the manner in which many farmers feed and care for their hogs from the time they are pigs until they are butchered or sent to market. The sight of many pig pens is enough to prevent any one from having a desire to eat pork, let it be in any shape you may prepare it. You should remember that what you are raising and putting on the market some one has to eat. It costs no more to raise pork in a cleanly way and put it on the market, and it will surely bring more money.

THE AMERICAN HOG.—It would be no new thing if I should tell you that I still believe that the American hog remains the champion debt payer and mortgage lifter of all live stock industries, and he pays well for handling, provided it is done intelligently and in a business-like manner. But lest I weary you I will close by saying that we should take courage and study the wants of the hog and persevere in well-doing, and by breeding better animals and by honorable and fair dealings victory will perch upon our banner, and we will still be able to ascend higher and higher until we shall reach the summit of excellence which may be found in the great American hog. I ask you to take better care of the hog, for he is the great commercial animal of the world.

FORESTRY.

Work of the Division of Forestry in Southern California.

The Division of Forestry has selected southern California as the field for an exhaustive series of measurements and investigations for the purpose of securing accurate knowledge of the relation of forest to the run-off of streams. The question has become an exceedingly important one in many parts of the United States where lumbering is extensive, and has caused much diversity of opinion among scientific men. After examining many watersheds and securing the advice of a number of hydraulic engineers, the Division of Forestry has chosen the watershed which embraces the sources of the Mohave river, in the San Bernardino mountains, as the best center for experiments.

The work will commence soon and will embrace a comprehensive study of the present forest cover, considered in relation to the rainfall and the flood capacity of streams. The area selected contains three distinct types—the Holcomb shed, a brush-covered district; the Little Bear shed, which has been denuded by lumbering; and the Deep Creek shed, still covered with heavy virgin forest. These areas are under the control of the Arrowhead Irrigation Co., which has kept twenty-eight rain-gauge stations in operation for seven years, and has also measured the flow of the streams during that time, so that the government experts will have much data already on hand. The soil is similar on all portions and the geological formation uniformly granitic. The rainfall on the forested and logged-off tracts is practically the same, but is slightly less on the Holcomb shed, which approaches desert conditions. It is believed that conditions are so nearly similar throughout the region that the observations will be as instructive as if made on the same tract before and after lumbering. The effects of grazing and fires will also be noted.

The flood capacity of the streams will be made the

basis of investigation. It is well known that, although the rainfall may be less, a barren area will often produce greater floods than a wooded area. This is because the water, unobstructed by vegetable cover, runs off the surface rapidly and is practically wasted. A lesser total rainfall, if conserved by the forest, will soak into the ground and flow steadily throughout the year. The investigations projected will be the first, however, in this country to attempt to prove by figures that the flood extreme of streams is in proportion to the lack of forest covering. The results will be applicable in a general way to any portion of the country, and will be of special value to all regions where irrigation is practised.

THE FIELD.

Unnecessary Steps on a Farm.

TO THE EDITOR:—In an article I wrote for the PACIFIC RURAL PRESS in November, 1894, under the above heading, I stated that in ten years I actually traveled about 1500 miles, which occupied a little over 182 days of my time (counting ten hours a day), in order to water my horse and cow three times a day, notwithstanding the fact that my watering trough was only 180 feet from my barn. I further stated that I bought some inch pipe, costing only \$7.50, which connected my trough at the pump to another one in my cow yard, and thereby saved not only this unnecessary traveling and valuable time, but that I soon found that my cow gave more milk by having free access to pure, fresh water, which in the summer months was many times a day.

UNNECESSARY SHOE LEATHER ON A FARM.—I have been thoroughly convinced by close observation for some years past that the great majority of farmers wear too heavy shoes or boots (as the case may be) in their general work on the farm, but more especially while plowing, harrowing and cultivating, where so much traveling is required. I know by past experience it has been so in my own case, and now, in my sixty-seventh year, I find it becomes absolutely necessary for me to dispense with as much surplus shoe leather as possible, in order to travel the distance required (over eight and one-fourth miles) in plowing even an acre of land in one day. Last spring I concluded to investigate this matter pretty thoroughly and will now give the result for the benefit of PACIFIC RURAL PRESS readers, trusting that my deductions will prove to be as interesting to them as they were to me. Last April I hired a man to plow a piece of land for me containing two and one-quarter acres. He was exactly ten hours in completing the work. After the work was finished, by very carefully counting the number of furrows, and then taking the average number of steps he took in turning one furrow the length of the field (566 feet), as well as the average length of each step, I ascertained almost exactly how many miles he had traveled in plowing the field, not including the distance traveled in turning at the ends, which was no small item in the course of the day. He wore ordinary work shoes weighing three and one-half pounds. Many men I know wear much heavier ones, or boots, as the case may be, while some wear lighter ones. By multiplying the number of steps he took during the day by the weight of one shoe, I found that he had actually lifted over thirty-two tons of shoe leather, to say nothing of the extra amount of dirt which always adheres more or less to one's shoes while plowing, especially on adobe land, and that he traveled at least eighteen and one-half miles. This young man was a great worker, and with his 12-inch plow and two strong, young horses plowed much more than a great majority of men would have done. It is not to be wondered at, then, that old men like myself get so completely tired out in even plowing one-half the amount that this young man did, as they would have to travel nine and one-quarter miles and lift over sixteen tons of shoe leather, providing their shoes were as heavy as his were.

THE REMEDY.—Avoid wearing heavy "stoga" shoes and boots as much as possible in general farm work, especially those with the soles full of large, round-headed nails. Let the Chinamen wear them if they wish to, as they always want to get as much as they can for their money. IRA W. ADAMS.

Calistoga.

Report on the Agricultural Capabilities of Alaska.

One of the important reports which has just been submitted to Congress by the Secretary of Agriculture and ordered to be printed deals with the agricultural investigations in Alaska. These investigations, as far as they have gone, indicate that it has latent capabilities which, when developed, may sustain a large population and make it a prosperous State. And why not? The little country of Finland, which lies between Sweden and Russia in the same latitude and is less than one-fourth the size of Alaska, has a population of two and one-half millions and exports both grain and live stock, as well as vast quantities of dairy products. The author of the report, Prof. C. C. Georgeson, who has charge of the

investigations, brought to Washington eleven varieties of spring wheat, a dozen varieties each of barley and oats, and also rye, buckwheat and flax, all of which had matured at the experiment stations at Sitka and Kenai in the Kenai Peninsula. The report states that red clover lived through the winter at Sitka, made a luxurious growth and matured seed, and that vetches and other forage plants did equally well. All the common hardy vegetables were grown to perfection, some cauliflower at Kenai measuring 14 inches across the head.

A statement by the superintendent of the Alaska Commercial Company in regard to his company's experience with live stock at Kadiak is of more than passing interest, because it reveals possibilities in the stock industry which are bound to be of much importance in the future development of the Territory. The company has for many years kept cattle, sheep, and Angora goats on some of the small islands near the town of Kadiak. On one of these islands it was not found necessary to feed or shelter the cattle at all, winter or summer. Year in and year out they lived in the open and were maintained by the native grasses which are abundant in all of southwestern Alaska. The herd increased yearly about 75% of the breeding cows. A flock of Angora goats increased 60% annually and gave very good results in mohair. A flock of sheep has been kept for the last sixteen years on pasture the year round. The increase was something over 60% and the clip averaged about five pounds of wool per head yearly. There seems to be no doubt that animal industry can be successfully prosecuted in different parts of Alaska.

For want of sufficient funds nothing has as yet been undertaken in the interior, but it is planned to establish at least one experiment station somewhere on the Yukon river the coming season, if a sufficient appropriation is made. Reports received by the Department of Agriculture from prospectors and others in the interior indicate that small grains and vegetables can be grown there, and it would seem to be sound economy on the part of the Government to aid in the development of whatever capabilities that vast region may possess.

THE DAIRY.

Grass Trials in the Humboldt County.

TO THE EDITOR:—As I see in the columns of the PACIFIC RURAL PRESS many inquiries in regard to forage grasses for wet and dry soils, and as I have spent a good deal of time in experimenting on many such plants, I will relate my experience.

Australian rye grass is excellent on wet or moist soils. I have one pasture that has been seeded for over twenty years and is good at present.

Italian rye grass is a prolific grower on moist soils, but not well adapted to dry soils, as it has a very short and tender root. It is good for hay and will produce large crops, but will not stand pasturing, as the roots are tender and small and stock will pull it up. There are many of our Humboldt dairymen who will not sow it, as they say it dies out, while the truth is—by careful observation—that the stock pull it up.

Orchard grass does better on dry soils and stands pasturing better on hill land in Humboldt than either of the rye grasses.

We have a plant or grass called English rib grass that will eat and grow on all kinds of soils on rocky points. Stock eat it well. It keeps green the year round and will grow on the driest soils we have in the vicinity of Blocksburg. [This is sometimes called "plantain." It is counted a weed in humid climates.—ED.]

Timothy does well on rolling or hill land, will produce large crops of hay and will last much better here in the interior than on the Eel and Mad river bottoms. I know fields around Yaegerville and Kneeland prairie that have

been seeded for fifteen years and produce large crops yet.

Mesquite grass makes a good forage grass for hill land, but will not last as long as Orchard grass. [This is the *Holcus lanatus*.—ED.]

I have been experimenting with all these grasses the last thirty-five years, both on the coast and here on Larabee. I ran a dairy ranch near Eureka on the Elk river bottom, part of it on hill land on old lumbering works, where the soil was dry. I have also cleared brush land here and sowed all the above grasses; I have also broken prairie and sowed them. Grass seed will eat and grow on burned or cultivated soils, but I never got a good stand when sown on uncultivated land.

ALEXANDER FORBES.
Blocksburg, Humboldt county.

Outlook of Dairying in Oregon.

By HON. THOS. PAULSEN at the Farmers' Congress, Salem.

The future outlook of dairying in Oregon depends on several contingencies. First of all, on the dairymen of Oregon, because of late our State has ceased to be, by increased and improved facilities of transportation, reserved to the home product. The dairymen of Oregon have to meet not only the competition of neighboring States, but the dairy products of Iowa, Wisconsin and other leading dairy centers are easily and cheaply brought here. It becomes necessary therefore to ascertain how we can best reduce the cost of our dairy products to meet this increased competition. This can be, and has already, in a measure, been accomplished by improved methods in the manufacture of our dairy products, but the fact remains that as yet a great portion of these products are produced at a positive loss. It is not what has been done by the progressive, up-to-date dairymen of our State, but in considering the future of dairying in Oregon the average result for the whole State counts. There is no question that this average, both as regards quality and quantity, although vastly improved in the last few years, is still far below what it should be if we consider the advantages which our State possesses, and especially the Willamette valley and our coast counties, as a dairy country.

UP-TO-DATE MACHINERY.—The first step in cheapening a product of any kind is to provide proper machinery; the next, to run this machinery with the least expense. As far as cows are concerned, Oregon has a good start, but only a start, and it is to be regretted that the present high price of beef has the tendency to cause some of

our dairymen to run a combined machine—in other words, a general purpose cow. A combined machine, while it may be profitable and even necessary under certain conditions, seldom answers the purpose as well, nor is it as profitable, as a machine especially adapted to the work which it is desired to accomplish. I have a combined mower and reaper, and while it is fairly good it is first-class neither as a mower nor a reaper.

GOOD FEED FOR GOOD COWS.—The next step after acquiring good machinery—a good cow is simply a first-class machine to produce plenty of good milk—is to run this machinery with the least cost. The answer to this question is, in my opinion, the silo and corn—plenty of it. I believe that the two, corn and silo, reduce the expense of feeding at least 25%; and the time will come when we will feed our cows on ensilage the year round, as, with the few exceptions of large farms and rich bottom lands, this will be the cheapest way, far cheaper than to use green crops through the summer for soiling or depending on outside pasture.

PROTECTION FROM FRAUDS.—But, even granting that we possess these two essentials—good machinery and an economical way of running it—there is another condition that confronts us, and that is fraudulent competition. The impression seems to prevail that our dairy and food law was passed for the especial benefit of the dairymen. This is not a fact, for while it is no doubt of great value to the dairymen of our State in protecting them, when properly enforced, against unjust and fraudulent competition, the consumer is even more vitally interested in this law and its proper enforcement, not only so far as it concerns dairy products, but also all other adulterated food products.

There have been many attempts, more or less successful, to protect the producer and manufacturer of honest goods, but complete or even a notable success has not been attained. Why not? Mostly because the consumers, not realizing the demoralizing and injurious effects of these adulterations, nor their extent, have not asserted themselves.

Our Boards of Trade, Chambers of Commerce, the Grange and other similar institutions and associations, as well as every newspaper, should take up this matter. The enemy is strong and well entrenched, both with money and legal talent secured by money, and unless the masses of the people take up this fight, this fraud devil will never be killed; and unless it is killed or at least badly hurt, the result can easily be foretold.

The outlook for dairying in Oregon is good, provided the dairymen of Oregon do their duty to themselves and the public, and last but not least the public insists on such laws and their enforcement that will make it practically impossible to sell adulterated food products in Oregon.

The products of California's dairies last year reached a total value of \$12,830,786. This fact was made clear by the annual report of William Vanderbilt, agent of the State Dairy Bureau, which was completed recently. Some of the items of leading values were as follows: Creamery butter, \$2,916,748; dairy butter, \$2,453,690; milk and cream produced for consumption, \$5,047,353; cheese, \$598,982; calves, \$934,159. There are 249,786 dairy cows in California.

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TESTIMONIAL.

Santa Clara, Cal., Feb. 8, 1900.
On March 31, 1899, I sent my son, who was then a very bad stammerer, to Prof. J. Whitehorn for instruction. The professor was most successful in correcting his speech, and to-day he speaks and reads naturally and fluently and without any stammering whatever. The professor's name will never be forgotten.
GEORGE ROTH.

PROF. J. WHITEHORN, A. M., Ph.D.

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Agricultural Review.

ALAMEDA.

COUNTY ROAD LIGHTED.—Oakland Enquirer: The county road between Oakland and Haywards is now lighted by electricity. The lights are each of 2000 candle power and are 1000 feet apart. There are forty-eight in the nine miles of road. The cost of the lights, which will be run on the "moonlight schedule," will be \$230.40 a month, or \$2764.80 a year. The current is secured from the power house of the Oakland, San Leandro & Haywards electric road.

SHIPMENTS OF NURSERY STOCK.—Niles Herald, Feb. 23: The movement of nursery stock from Niles began Nov. 24. Up to Jan. 1 Horticultural Commissioner Wm. Barry issued 93 certificates of inspection, and since then to Feb. 22, 411—a total of 504. The total amount of fruit and ornamental nursery stock received and shipped from Niles since Nov. 24 is 389,257 as per his record, to which may be added 150,000 of which no record has been kept.

CROP PROSPECTS BRIGHT.—The outlook for the season in this valley is bright, and farmers and orchardists are making preparations to harvest record-breaking crops. The rains during the past few days moistened the crust on the surface of the ground, formed during the preceding weeks of dry weather, and there is every prospect of a prosperous year. Most of the plowing is well advanced and seeding is practically completed. New potatoes are about ready for market and peas will soon be shipped. Several hundred sacks new volunteer potatoes have already been forwarded to market. The orange yield will be above the average. Although some shipments have been made, most of the crop has been used in this county.

BUTTE.

POULTRY INDUSTRY.—Oroville Register, Feb. 22: In the vicinity of Wyandotte a number of people are going into poultry raising on an extensive scale. Among those who are making a special feature of this are J. M. Grubbs and G. W. Miller. The latter during the past season kept 200 hens, mostly White Leghorns, and found the business very profitable. He obtained the best stock he could get and says it pays. He intends to increase the number this year to 500 hens.

FRESNO.

VINEYARD WORK.—Sanger Herald, Feb. 24: Nearly all the vineyards have been pruned and plowed. A great deal of care is being taken of the vines this year.

BLACK TURNIPS.—Sanger Herald, Feb. 17: Some of the nicest turnips we have ever tasted were of the large, black variety, grown by M. Rogallo in the Kings river bottom. The outer skin is black, while the meat of the turnip is white and highly nutritious. The seed was sent to Mr. Rogallo from Spain.

DIRECTORS ELECTED.—Fresno Republican, Feb. 22: At a meeting of the stockholders of the South Branch Ditch Co., the following were elected directors for the ensuing year: J. B. Harrison, president; H. Burness, N. G. Kittle, E. L. Luxon and J. H. Sayre. Prid S. Turnbull was re-elected secretary.

IRRIGATION SUIT DECISION.—Sanger Herald, Feb. 24: The civil suit of the Fresno Canal & Irrigation Co. vs. the Alta Irrigation District and the 76 Land & Water Co. has been decided in favor of the plaintiffs. Judge Shaw has awarded them 1000 feet of water a second and enjoined the directors of Alta district from constructing any dams in Kings river that will obstruct the natural flow of water into the canals of the old Church system for irrigation.

APIARISTS WILL ORGANIZE.—Fresno Republican, Feb. 22: The bee keepers of this county have decided to organize on lines similar to the Raisin Growers' Association. Secretary Gilstrap estimated that 4500 hives were represented at the meeting. The value of the honey output last year was \$100,000.

LAKE.

CROPS ARE PLANTED.—Lakeport Press, Feb. 22: Farmers have nearly completed planting their crops and another week will enable them to finish the work in good shape, except in a few places. The acreage sown this year is greater than usual owing to the unusually favorable weather conditions.

LOS ANGELES.

BIG ARTESIAN FLOW.—Dispatch from Long Beach, Feb. 20: An artesian flow, which is probably the largest of the wells of southern California, has been tapped by General E. Bouton. The boring is 12 inches in diameter, and as fast as sunk the well has been lined with a double thickness of sheet steel. The casing has been forced down with hydraulic pressure

equivalent to a weight of 250 tons. A good flow was tapped at a depth of 320 feet, and that stream was found to have a perpendicular thickness of 210 feet. Underneath a stratum of earth was penetrated, and below that, at a depth of 630 feet, the big lower stream was touched. Drilling was continued to a depth of 702 feet, where a layer of gravel was encountered. Boring has been continued 28 feet farther and the bottom of the stratum of stones has not yet been struck. The pressure of water is greater than at any other well in this part of the State, as far as known. Workmen lost control for a moment and a 12-inch flow leaped up 2 feet above the ground before it could be shut off, in spite of the fact that the pipe had not yet been perforated.

DIRECTORS ELECTED.—Covina Argus, Feb. 17: The Lemon Association has elected the following board of directors: A. P. Kerckhoff, J. J. West, S. J. Miller, J. C. Wright, W. P. Watts, E. O. Kennard.

UNUSUALLY EARLY NAVELS.—J. W. Jeffrey, horticultural editor of the Los Angeles Times, sums up the orange outlook as follows: I find that the orange output has been very much overestimated and for the first time since Navel oranges have been grown here we have perfectly ripe fruit early in February. The average orange is filled with that rich, aromatic juice we usually look for in April, and never much before the last of March. Never were the fruits so filled with sugar at this time of year. It is easy to account for this in the fact that there has been no frost to check development; no cloudy days, but continual sunshine—that condition of weather that puts sweetness into the sap, ripens the cells and on the side shortens the season by several weeks. I do not hesitate to predict that by the first of March the growers will awaken to the fact that orders are pouring in for fruit, with but little fruit to supply them.

MONTEREY.

AN APIARY ON WHEELS.—Salinas Index, Feb. 22: An apiary of 100 hives passed through Salinas yesterday on the freight train for San Luis Obispo county, where the bees will be fed on wild sage blossoms for three or four months, and then moved to the alfalfa fields on the San Joaquin. The hives are so constructed that the bees cannot escape. They are supplied with water and food upon their travels, and it is said that they can be taken across the continent in that manner.

HEAVY GROWTH OF GRASS.—It has been the rule among orchardists to plow early and keep weeds down, but the early rains and warm winter of this season have left a heavy growth of grass in the orchard which not only prevents washes from spring rains, but, when plowed under in spring, enriches the soil and helps retain the moisture.

IRRIGATING ADOBE LAND.—Salinas, Feb. 21: The irrigation of the adobe land of the Gonzales ranch, although at one time thought to be impracticable, has been accomplished. At present about 4000 acres are being inundated. It is estimated that between fifty and seventy-five acres can be irrigated each day.

ORANGE.

CELERY CROP.—Santa Ana Blade, Feb. 23: The celery shipping season is nearly over, as only about 100 cars yet remain. The season's output will fall short of expectations. The reason for the shortage is that the season has been so mild and open that much of the crop has softened and been rendered unfit for shipment. D. E. Smeltzer has made calculations to plant 450 acres next season. The returns from the current season's crop are satisfactory. Admitting that the crop has been decreased one-quarter, a conservative estimate puts the figures at 700 cars, at about \$225 a car, or \$157,500 in all, or \$131 an acre for the 1200 acres.

SACRAMENTO.

VANDERBILT'S JERSEYS MAY COME.—Dispatch from Sacramento, Feb. 26: In all probability the famous herd of Jersey cattle from George W. Vanderbilt's country seat at Biltmore, N. C., will be brought to California and exhibited at the State Fair in September. Secretary Shields of the State Agricultural Society is now in correspondence with the management, and it has practically been decided that at least a carload, representing the best of the herd, will be brought out. This herd is particularly notable for the fact that it is composed of cattle imported from the Island of Jersey by the Vanderbilts, and aims to represent exclusively the descendants of Golden Lad, probably the most famous bull of the interior of the island.

SAN JOAQUIN.

CROP REPORTS.—Stockton Mail, Feb. 20: From all points come reports that the outlook for grain this year is first-class,

though the acreage at this time is not as great as last year, owing to the fact that the early rains made it impossible to plow the adobe lands. Plowing and seeding are still in progress, however, and with favorable weather the acreage may be as large as last season.

FROM HOOD FARM.—J. P. Ashley of Linden has received from Hood Farm, Lowell, Mass., a valuable Berkshire boar, bred in the very choicest strains. The sire of the young boar purchased by Mr. Ashley is Highclere King of H. F., and his sire is Wantage King of H. F., a son of the great English-bred sow Wantage Poetess B., imported by Mr. Hood. The dam of Highclere King of H. F. is also an imported sow named Highclere XV. The dam of Mr. Ashley's pig is Highland Countess IX of H. F., a great prize winner. She was the first-prize sow at the New England, York County, Me., and Danbury, Conn., fairs, 1898, and also at the Wisconsin and Illinois State fairs, 1899. Mr. Ashley has shipped hogs from several States, but, considering the distance, never before had one come in as good condition as this one.

SANTA CLARA.

CURED FRUIT ASSOCIATION.—San Jose Mercury, Feb. 25: It was learned at the office of the Cured Fruit Association that everything looked favorable for getting the 75% acreage upon which the existence of the association depends. From Colusa came the report that Judge Aiken called a meeting to which assembled 90% of the growers. Nearly every man signed. In Napa county over 90% of the orchardists have been seen, and have either signed or agreed to sign the contract. The committee expects to get 95% of the growers of this county. O. B. Olufs, in Director Kearney's district, reports that everything is progressing auspiciously in that section, and that it will come up with the required percentage. From the southern part of the State assurance comes that 75% of the growers will sign. All day yesterday signed contracts were received at the office on First street. Throughout the State the organizations of each district are complete, and the work is progressing rapidly.

SANTA CRUZ.

INVESTING IN BELGIAN HARES.—Watsonville Pajaronian, Feb. 22: Geo. P. Martin is one of the latest among local investors in Belgian hares. On Tuesday he received three royally bred and registered Belgian hares from the pens of one of the best breeders in Los Angeles. Martin's hares have registered pedigrees that are long enough to reach to the commencement of the Belgian hare business.

SOLANO.

FRUIT GROWERS ORGANIZE.—Suisun Republican, Feb. 23: At a meeting of fruit growers it was decided to form a local branch of the Cured Fruit Association. It will be called the Suisun Valley Fruit Growers' Association. The following officers were elected to serve until the last Saturday in June, the time for the annual election: W. G. Davisson, president; Charles Roberts, vice-president; F. L. Gordon, secretary and treasurer. Meetings will be held on the last Saturday in each month at 2 o'clock P. M. The dues were fixed at \$1 per year.

YOLO.

IMPROVED HEADING MACHINERY.—Winters Express: Last week S. W. Warder forwarded his application for a patent on a device that promises to be of interest to grain growers. Mr. Warder's invention is an adjustable header, either for the ordinary header or the combined harvester, and consists of an arrangement whereby the reel and the sickle bar remain at the proper distance apart when raised or lowered for high or low grain, and for high grain the reel instead of remaining directly over the sickle bar, as in the ordinary header, is automatically projected beyond it, thus properly forcing the grain against the sickle.

ORCHARDS ARE FREE FROM PESTS.—Woodland, Feb. 17: The County Board of Horticulture was in session to-day. Reports received from all districts are to the effect that Yolo county orchards are practically free from pests and insects.

ARIZONA.

LOWER FREIGHT RATES ON SHEEP.—Los Angeles, Feb. 20: The railways have made a rate of \$75 a carload for sheep from all points in Arizona to points in Ventura, Los Angeles and Kern counties, California. It is expected that thousands of sheep will be transported from Arizona to the grazing grounds in these counties, as the feed in the Territory is exhausted and the sheep will die unless taken to better pasturage.

NEVADA.

SALE OF CATTLE.—Drovers' Journal, Feb. 8: Samuel McIntyre sold to Ballantine & Rockwell of Denver his bunch of 1200 yearling steers at the round price of

\$22.50. They are Aberdeen-Angus and Galloways. They are now on Mr. McIntyre's ranch near Elko.

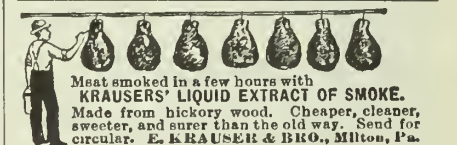
WASHINGTON.

PLANTING FRUIT TREES.—Seattle Post-Intelligencer: General Freight Agent Moore of the Northern Pacific, who has just returned from a trip through the fruit districts of Washington, Idaho and Oregon, says the outlook for fruit for the coming year is very flattering. Many acres are being planted with fruit trees. The weather throughout the fruit districts, he says, has been very favorable, and every indication points to a large crop.

DIVERSIFIED FARMING BEST.—State Grain Inspector Wright has made a trip through the eastern Washington wheat belts. He reports that the men who have engaged in diversified farming are generally much better off than those who have devoted their energies to wheat alone. A disposition exists among the farmers to sell their wheat at the present prices. Last year's crop was light in weight and much of the 1898 wheat remaining in the country is being bought for mixing purposes to keep up the grades. The prospects for this year's crop are excellent. The Big Bend district has had 3 inches of snow, but at Walla Walla there has been none. Nevertheless, the country was well wet through last fall, giving the wheat the best start Mr. Wright has ever seen. All of the interior flour mills are running full time and the millers are overbidding the exporters for choice milling wheat. Thus, gradually, the grain is being shipped from Tacoma and Seattle in the form of flour instead of by sailing vessels to Europe as wheat.

PRIMUS AND PHENOMENAL.

The Two Great Hybrid Berries. Crossed (by Mr. Burbank) from Black and Raspberry. 25c each; \$2 doz. Also Wine and Logan Berry plants at one-half the above price. E. J. TALIAFERRO, Fair Oaks, Sacramento Co., Cal.



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THE HOME CIRCLE.

The Children.

When the lessons and tasks are all ended,
And the school for the day is dismissed,
And the little ones gather around me,
To bid me good-night and be kissed;
Oh, the little white arms that encircle
My neck in a tender embrace!
Oh, the smiles that are halos of Heaven,
Shedding sunshine of love on my face!

And when they are gone I sit dreaming,
Of my childhood too lovely to last;
Of love that my heart will remember
When it wakes to the pulse of the past,
Ere the world and its wickedness made me
A partner of sorrow and sin;
When the glory of God was about me,
And the glory of gladness within.

Oh, my heart grows weak as a woman's,
And the fountains of feeling will flow,
When I think of the paths steep and stony
Where the feet of the dear ones must go;
Of the mountains of sin hanging o'er them,
Of the tempests of fate blowing wild;
Oh, there is nothing of earth half so holy
As the innocent heart of a child.

They are idols of hearts and of households,
They are angels of God in disguise;
His sunlight still sleeps in their tresses,
His glory still gleams in their eyes.
Oh, those truants from home and from Heaven,
They have made me more manly and mild,
And I know how Jesus could liken
The Kingdom of God to a child.

I ask not a life for the dear ones,
All radiant, as others have done,
But that life may have just enough shadow
To temper the glare of the sun.
I would pray God to guard them from evil,
But my prayer would bound back to myself;
Ah, a scrap may pray for a sinner,
But a sinner must pray for himself.

The twig is so easily bended,
I have banished the rule and the rod;
I have taught them the goodness of knowledge,
They have taught me the goodness of God.
My heart is a dungeon of darkness,
Where I shut them from breaking a rule;
My frown is sufficient correction;
My love is the law of the school.

I shall leave the old house in the Autumn,
To traverse its threshold no more;
Ah, how shall I sigh for the dear ones
That meet me each morn at the door.
I shall miss the "good-nights" and the kisses
And the gush of their innocent glee,
The group on the green, and the flowers
That are brought every morning to me.

I shall miss them at noon and at eve,
Their song in the school and the street;
I shall miss the low hum of their voices,
And the tramp of their delicate feet.
When the lessons and tasks are all ended,
And Death says, "The school is dismissed!"
May the little ones gather around me
To bid me good-night and be kissed!

—Charles Dickens.

A Belated Avowal.

"You know I like you, Barbara! I've always liked you," stammered John Leighton awkwardly leaning against the kitchen window-sill, and looking in with a shy, embarrassed smile. "I've never seen my way clear to telling you so before—but—but—I've made the last payment on that old account this morning, Barbara! I can start fair after this." The woman to whom he spoke stepped back, and returned a cooling flat-iron to the stove before she answered. Seen under favorable circumstances her face must have been an attractive one. Today, however, her hair was twisted into a solid knot above the collar of an unbecoming brown calico; her eyes showed traces of tears, and the drooping corners of her mouth rendered her expression both stern and sorrowful.

"Yes, John, I know you've always liked me," she spoke in a hard, resolute

tone, "just as I know that you like old Towser, and the horses and cows at home, and pleasant weather in haying time, and a good price for your apples in the fall. You're used to me, and you have a fashion of liking what you see around every day."

Her listener flushed hotly, opened his lips, then closed them again, as if he found it difficult to utter what was in his mind.

"I feel like telling you just once, John," went on the voice at the ironing-table, "how much you've cared for me in reality. It began when I was eighteen, you remember—with plenty of others to choose from. I was a pretty girl in those days, too, as there's no harm in saying now, when all the prettiness has faded." John Leighton's honest eyes rested upon her in astonishment, but hers were bent upon her work. "You paid me lots of attention at first, but you never really said—anything. I kept expecting that you would, through week after week, and month after month; and set my whole heart upon you, John, fifteen years ago! It's a long time to be kept waiting upon uncertainties, isn't it? No; don't interrupt me! For at least half of those years I've wanted to have my say once. Now I've going to."

"You needn't look at me so reproachfully, either. I understood all along that your mother had queer turns, and wasn't exactly right in her mind; and everybody said she was scared almost to death for fear you'd bring a wife home. But didn't you know you could trust me to wait, John—and to hold to you steady through it all?"

"What did you say? That was just it—you didn't want to stand between me and anything better? I showed so many signs of wanting anything better, didn't I?" She smothered a sudden sob—"and a girl has no pride to be hurt, of course, when folks keep asking her when it's to be, and she knows in her own heart that there is no 'it,' let alone the 'when.'"

She flung a handful of drops at random across the sleeves of a garment that she had been drying while she talked. Her cheeks were scarlet now, her eyes shining. "You needn't look so ashamed of me," she flashed out excitedly. "I know you're thinking I'm too bold to live, but I shouldn't be saying all this to you, John Leighton, if the house wasn't let and my trunks all packed ready to go out of it to-morrow. When this ironing's finished—and I've taken up a little root of myrtle from the burying ground—I'm through here. Don't upset that flower pot, John; there's no need of jumping round as if something had stung you, if I am."

"Barbara—aren't you forgetting about my brother, and the shame—?"

"What did that amount to, anyway? It wasn't you that forged this check—besides, I never can see that it's any man's duty to put on every yoke that a whole family see fit to whittle out for him. You were foolish to let it go that 'twas your signature; \$600 is a pretty big sum for a farmer to save up and pay out for somebody else, as you have. But I never cared so much for you in my life as I did the night you told me about it—and when you got through the telling you took up your hat and went home, without so much as a good-by."

The man who stood outside the window had bowed his head. More than one thread of silver gleamed in his hair as the sunlight fell upon it; his face was grave and pale. "Barbara," he began, with a curious choking in his voice, "I've always—"

She did not seem to hear him. "I did expect you'd speak, John, when father died and I was left all alone here. I can own it now as honestly as if I'd died too, you see. Something has died in me lately; my heart perhaps, or the old happy feeling—and there's nothing left but the lonesomeness and the ache."

A sigh that was almost a groan came from her listener, but he made no attempt to speak.

"I used to think there never were two people any better suited to live together than we were"—for the first time her voice trembled. "We're both plucky and fond of work; a good laugh now and then suits one of us just as well

as it does the other; we like books, too, and we're about the only ones in the neighborhood who realize that there can be a little strip of the world outside of what's in sight from Montrose Hill. As to dispositions, I'm quick, I know, but I don't hold my temper; and you—why, you haven't any temper to hold."

"I don't know about that." John twirled his straw hat upon his fingers and made the admission with slow sincerity. "I can be pretty spunky when I get started, but I've always liked you too much for—"

"Oh, well, it does not make any difference now! The end has come at last—both to the wishing and the worrying." She had dried her wet fingers upon her apron, and stood erect, with tightly folded arms. "You've let duty, and what you were foolish enough to call disgrace, stand between us like a great iron fence. You've played at being dumb so long that you are almost dumb in reality at last; and I'm nothing but a homely, disagreeable, old cross-patch in these days, whatever I may have been once. I'm going to live in Springfield after this, out of sight of the old home where I used to be so happy. When you go by here on your way to the postoffice perhaps you'll remember the times we've talked together down by the cinnamon rosebush in the garden, and forgive me for being so hateful to you this last morning. It's almost killed me to blame you, John; but—somehow—I can't help it." Her voice yielded upon the words to a sudden storm of sobs that shook her from head to foot.

The straw hat fell unheeded to the ground. Its owner made two steps to the open door, two more to the kitchen, and clasped her, heedless of resistance, in his arms. His eyes, misty with sympathy and love, sought hers eagerly; his heart beat with strong throbs of tenderness—but his lips shaped only the familiar words, "You know I like you, Barbara! I've always liked you." —Mary C. Hews.

Care of the Eyes.

On arising in the morning the eyes should be bathed gently in cold water—twenty "passes" are said to be decidedly strengthening. While using them closely they should be rested at intervals of an hour or two, for the strain of constant reading or sewing is like that of extending the arms at a certain height immovable. Imagine, then, the taxing of the eyes, which cannot complain save after years of irreparable neglect. When dust settles in the eyes, warm water will soothe them of any inflammation; rose water is extremely refreshing, but it should be bought in small quantities, as it keeps but a short time. Five cents worth will give a daily eye bath for several weeks. Tea leaves and alum water were the eye tonics which our grandfathers used.

The Meaning of the Thistle.

Do you know why the thistle is the national flower of Scotland? The story is a pretty one, and very characteristic of the Scotch. It is said that centuries

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ago the Danes were making an inroad into Scotland. They were advancing cautiously at night. But, unfortunately, they were barefooted. They had got close to the Scotch camp, when one of the men at the head of their column stepped on a thistle. Did you ever put down your foot squarely upon a real Scotch thistle? If you have, you will

The Future of Children

A child's life may be blighted by the diseases of youth, such as Rickets, which is characterized by weak bones or crooked spine, and inability to stand or walk steadily, or Marasmus, that wasting disease characterized by paleness and emaciation, or Scrofula, a constitutional disease of the glands and neck.

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not be surprised to hear that the man gave a scream of pain. His scream awakened the Scotch. They sprung up, and perceiving their enemies, fell upon them and defeated them. And the little thistle was made the Scotch flower.—Pittsburg Dispatch.

The Lessons of La Grippe.

In a season like the present, the care of the health becomes of more than usual importance. La grippe claims countless victims, and persons of customary excellent health, and unlimited confidence therein, are occasionally numbered in the list.

By care of health the writer does not by any means imply a resort to drugs, actually needed and skilfully administered, while beyond doubt useful when needed, are oftener productive of harm in ignorant hands. Better results come from rational dressing, keeping the body, and especially the feet, warm and dry, and avoiding unnecessary exposure when in any way debilitated by fatigue or otherwise.

Properly protected, there is no better tonic than exercise in the outer air.

The subject of proper breathing at all times is receiving much attention of late, and decided benefit to the public health is likely to result. Because of this, women are adopting a looser and more graceful mode of dress, for, the art of breathing once mastered, a tight garment of any description becomes unbearable.

Excesses in diet are especially to be avoided, and bathing, at a temperature which experience has proven best for the individual, should be faithfully practised. More than all else is one in danger from the pernicious habit which busy city dwellers acquire in winter, even those who pride themselves upon the health, that of abridging the hours of sleep to the smallest possible limit. The system soon becomes weakened without sufficient sleep, and the offender is often surprised by a call to surrender to the prevalent malady.

Even where all precautions are observed, however, la grippe occasionally fastens upon those who suppose themselves immune from all physical ills, and in such case no risks should be taken. It is better to succumb, and, even if opposed to medical treatment, to at least keep quiet and warm, than to wear one's self out in vain protest. Especially should the patient avoid resuming activity too soon. The man who described the affliction as one "where you are worse after you get well" was not far from right.

After even a mild attack the convalescent should remain quite for several days, and let the world go on without his assistance. Complete rest, mental and physical, is the best restorative, and one who ignores this necessity is more than likely to suffer the penalty of days and nights of debility and nervous unrest.—Elizabeth Robbins Berry.

Tea and Coffee.

Although every woman has an idea she can brew a good cup of tea, there are a very great number who are far from adepts at this simple art.

The first thing is to choose a good tea. It is impossible to make a good brew from inferior material. Good tea at a fair price will be found the cheapest in the end.

The water used for making tea must be freshly boiled. It must never be drawn from a hot water or a kitchen boiler, and be sure the kettle used is perfectly clean. The inside of the kettle should be washed out occasionally with hot water and soda and then well rinsed. The habit of leaving tea leaves in a pot for any length of time after using it is a very bad one. The pot ought to be thoroughly washed out, well dried and left with the lid open or off to air.

Provided all the above is carried out, the making of the tea is the next to be proceeded with. Half fill the pot with boiling water and when well heated pour the water away. Put in as much tea as is required. The old-fashioned rule of one teaspoonful for each person and one for the pot is a very good one.

Take the teapot to the kettle, never the kettle to the teapot, and pour the water gently on. Cover with a cosy and let it stand in a warm place to infuse. The length of time for infusing will vary with the quality of the tea. The better the tea the longer time it will take to infuse. Tea is never good, however, if it is allowed to stand too long. If the tea has to be kept hot for any length of time the leaves must be removed from it.

Lovers of tea will tell you, with a wise shake of the head, that tea should never be allowed to steep for any length of time and should never be used a second time. The latter rule is particularly insisted upon, yet the Chinese, who must certainly be looked upon as good authorities on the tea question, say to the contrary.

The Chinese put tea into their little tea bowls, let it steep a very short time, pour off the liquid and drink it, and then add more water to the leaves. The tea from this second brewing is the better, they say. It has not the roughness of taste of the first brew.

Good tea, taken in moderation and properly prepared, is pronounced by doctors to be a stimulant to the nervous system.

Coffee lovers are periodically assailed with the dread, amounting sometimes to conviction, that their favorite beverage is not wholesome for them. These will be reassured by some experiments in diet which a physician carried on at a hospital recently.

He found, to quote from his report, that "coffee acted upon the liver and was altogether the best remedy for constipation and what is called a bilious condition; that tea acted in precisely an opposite direction—namely, as an astringent," and he adds: "Nothing we found could bring the peace to a sufferer from a malarial chill that would come from a cup of strong coffee with a little lemon juice added." Another interesting fact developed by these same experiments was that for neuralgia in its simple form, fresh, strong, hot tea was almost a specific.

Many coffee lovers who find at times that the drink is not agreeing with them will notice a change for the better in its after effect if the cream is left out. This is not so great a hardship as it seems, provided care is taken to have the coffee of the best quality and served clear, fairly strong and hot. After taking it in this way for a few mornings with a lump or two of sugar it will be almost an effort to return to the cream compound.

The difference between creamless morning coffee and the after-dinner French coffee is that the latter is infused and the former usually boiled. To bring coffee just to a boiling point and to hold it there for a moment or two develops, so the chemists say, the stimulating property. The breakfast coffee, therefore, which is intended to freshen one for the day should be prepared in this way. The little cup taken

at the end of the day is better to be simply infused through the French coffee pot, as the exciting property is helpfully spared at such time.

DOMESTIC ECONOMY.

Parsnips at Their Best.

BOILED PARSNIPS.—Wash, scrape, split them and boil until tender, which will require from one to two hours or more, according to the size and condition of the vegetable; add salt, and when perfectly tender drain, dress with butter, pepper and salt, and send to the table in a hot, covered dish.

FRIED PARSNIPS.—Slice lengthwise the halved boiled parsnips; dip each slice in melted butter, dust with pepper and salt, dredge with flour, and fry in ham or bacon drippings and butter in about equal proportions. If a very little sugar is melted with the butter in which the slices are dipped it supplies the proper vegetable sweetness when it is lacking. The flour dredging may be omitted if preferred. Be sure that parsnips have been boiled until perfectly tender for frying, and be careful to fry only to a rich brown.

STEWED PARSNIPS.—Wash, scrape and slice across the grain, as potatoes. Just cover with boiling water, add salt, one heaping tablespoonful of butter, and one tablespoonful of sugar to a quart of sliced vegetable. Stew, closely covered, until perfectly tender, when the water should have quite boiled away.

CREAMED PARSNIPS.—Prepare as in last recipe, adding one and one-half cupfuls of mixed milk and cream (or one cupful of cream) in which one teaspoonful of flour has been blended; cook five minutes, and serve.

PARSNIP FRITTERS.—Mash boiled parsnips fine (or better still, those prepared as stewed parsnips), and after seasoning then add to one pint of the pulp one teaspoonful of flour and one well-beaten egg, make into little cakes and saute in a spider, or make into croquette shapes, dip in egg, roll in crumbs, and fry in deep fat.

How to Roast a Leg of Mutton.

The first requisite after the leg of mutton itself is a roasting pan. This may be of any pattern, provided it is large enough and practically air-tight when the cover is on. In cooking mutton the first essential is to have it thoroughly done. Whatever may be thought of rare beef, rare mutton is not palatable. The roast should be well rubbed with salt, a trifle of water poured in the roasting pan and then securely closed and placed in a moderately hot oven with the temperature evenly maintained until done. One can not give the exact time, as it will vary from two hours to three, according to the quality of the roast.

If a roaster is not available it is very much better to make a "pot roast" rather than to attempt to roast a leg of mutton in an open pan in the oven. In cooking a pot roast the vessel should be large enough and should be tightly covered and the water kept gently boiling until the roast is thoroughly cooked, by which time the water should have boiled away. The roast can then be browned in the pot in which it has been boiled. Salt and heat are the only accessories permissible in cooking a leg of mutton. After it is upon the table it may be embellished as taste inclines one.

But the man worth while
Is the man who will smile
When everything goes dead wrong.
For the test of the heart is trouble,
And it always comes with the years,
And the smile that is worth
The praises of earth
Is the smile that shines through tears.

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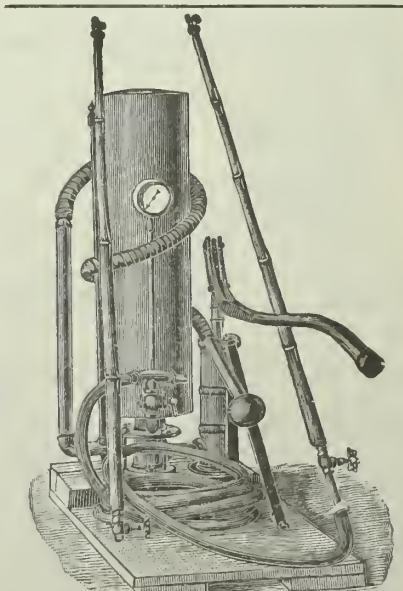
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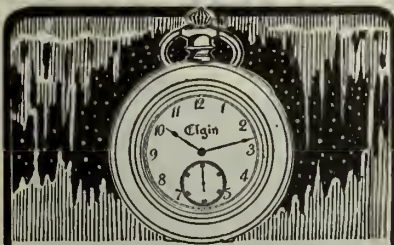
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Feb. 28, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	68½@67¾	68½@—
Thursday.....	—@—	—@—
Friday.....	67¼@66¼	—@—
Saturday.....	66½@65½	—@—
Monday.....	66½@65½	—@—
Tuesday.....	65¾@66¼	—@—

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday.....	5s 9½d	5s 9½d
Thursday.....	5s 9½d	5s 9½d
Friday.....	5s 8½d	5s 8½d
Saturday.....	5s 8½d	5s 8½d
Monday.....	5s 8½d	5s 8½d
Tuesday.....	5s 8½d	5s 8½d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May	Dec.
Thursday.....	98½@99¼	1 05½@1 06¼
Friday.....	99 @ 98½	1 06 @ 1 05½
Saturday.....	99 @ 99¼	1 06½@1 06¼
Monday.....	99 @ 98½	1 06 @ 1 05½
Tuesday.....	99 @ 98½	1 05½@1 05½
Wednesday.....	98½@98¼	1 05½@1 05½

*Holiday.

WHEAT.

The market for this cereal has continued in unfavorable condition for sellers since last review. Nothing else could have been expected, with the tax scare at its worst, and Eastern and foreign markets lacking firmness. The tax bugaboo will be gone the coming week, however, and will be out of the way for another year. In most instances the concessions demanded by buyers were more than the tax would likely amount to. Shippers have been diligent in getting their holdings aloft before the assessor puts in an appearance, as is evidenced by the wheat clearances of the current month, which aggregate more than for any previous month the coming season. Sixteen wheat cargoes have been cleared from this port during February, aggregating 51,000 tons, with a clearance valuation of \$1,041,000. The dry weather in California had a tendency to harden values in the local market, but this was offset by adverse influences abroad, shipments for the week from Eastern and South American ports being heavy, and the quantity afloat for Europe showing an increase, as also the "visible" supply in this country.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:
May, 1900, delivery, 99¼@98½c.
December, 1900, delivery, \$1.06¼@1.05½.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at 98½@98¼c; December, 1900, \$1.05½@1.05½.
California Milling.....\$1 00 @1 05
Cal. No. 1 shipping, alongside.....98¾@1 01¼
Oregon Valley.....95 @1 02¼
Walla Walla Blue Stem.....95 @1 05
Walla Walla Club.....85 @1 02¼
Off qualities wheat.....82½@95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	688d@689d	68¼d@685d
Freight rates.....	—@25s	40@41¼s
Local market.....	\$1 12¼@1 15	98¾c@1 01¼

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Trading has been of light volume since last review, with market fully as favorable to buyers as previously noted. Quotations remain unchanged, but wholesale transfers or sales of round lots were not possible at full figures. Local dealers and large consumers are as a rule carrying light stocks, having little or no confidence in the future of the market.

Superfine, lower grades.....	\$2 40@2 60
Superfine, good to choice.....	2 65@2 90
Country grades, extras.....	3 00@3 25
Choice and extra choice.....	3 35@3 60
Fancy brands, jobbing.....	3 60@3 75
Oregon, Bakers' extra.....	3 00@3 40
Walla Walla, Bakers' extra.....	3 00@3 40

BARLEY.

Market has shown more firmness, owing to need of rain in the southern part of the State where a large area is ordinarily seeded to this cereal. The strength was more pronounced in values for future deliveries than in prices obtainable from close cash buyers for spot offerings. Holders as a rule were, however, slow to make

concessions, and while quotable rates were not materially changed, better average prices were realized than for a week or two preceding.

Feed, No. 1 to choice.....	76¼@80
Feed, fair to good.....	65 @75
Brewing, No. 1 to choice.....	87¼@97¼
Chevalier, No. 1 to choice.....	1 00 @1 07½
Chevalier, No. 2.....	—@—

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:
Seller, 1900, new, —@—
May, 1900, delivery, 76¼@75c.
December, 1900, delivery, 77¼@76¼c.
Wednesday, at regular noon session of the Call Board, May, 1900, No. 1 feed sold at 75@75¼c; Dec., —.

OATS.

Market has not changed appreciably since previous review, either in general tone or in quotable rates. Stocks of choice to select are of very moderate volume, and such are being in the main very steadily held, especially Whites and Grays. For colored oats, more particularly Black, and for ordinary qualities of other kinds, the market is decidedly slow and inclines against sellers.

White Oats, fancy feed.....	1 25 @—
White, good to choice.....	1 15 @1 22½
White, poor to fair.....	1 07¼@1 12½
Gray, common to choice.....	1 10 @1 20
Milling.....	1 15 @1 25
Surprise, good to choice.....	1 20 @1 30
Black Russian.....	90 @1 02½
Red.....	95 @1 20

CORN.

There is not much corn arriving, nor is there much of any sort now in stock in this center. Present supplies are mostly Large Yellow and mixed White and Yellow from the East. Prices are quotably higher, but trade is light. California Small Yellow continues in scanty supply and in a retail way commands stiff figures.

Large White, good to choice.....	1 02½@1 07¼
Large Yellow.....	1 02½@1 07¼
Small Yellow.....	—@—
Eastern Mixed.....	1 00 @1 05

RYE.

The little business doing in this cereal is within range of unchanged quotations, the market showing steadiness.

Good to choice, new.....	1 02½@1 05
--------------------------	------------

BUCKWHEAT.

Stocks are light and market unfavorable to buyers. Sales are so few and far between, however, that values are not very clearly defined.

Good to choice.....	2 00 @2 10
Stiversktn.....	—@—

BEANS.

Market has presented a better tone than for a week or two preceding, the improvement being in the matter of inquiry, buyers showing more disposition to take hold. The demand was largely on Eastern account, and was more for white than colored beans, although the latter did not lack for custom where there was any inclination shown to make prices satisfactory to buyers. There are no heavy supplies of choice to select beans of any variety, and holders prefer carrying such stock rather than making any noteworthy concessions to effect sales.

Pea, fair to good, 100 lbs.....	3 10 @3 35
Small White, good to choice.....	3 10 @3 35
Lady Washington.....	2 90 @3 10
Butler, small.....	3 75 @4 00
Butler, large.....	—@—
Pinks.....	2 65 @2 85
Bayos, good to choice.....	3 25 @3 40
Reds.....	3 75 @4 00
Red Kidneys.....	4 00 @4 25
Limas, good to choice.....	5 10 @5 25
Black-eye Beans.....	4 50 @4 75
Horse Beans.....	—@—
Garhanzos, large.....	2 50 @2 75
Garhanzos, small.....	2 00 @2 25

DRIED PEAS.

There are no large quantities of any kind offering, and market shows firmness, especially for choice Niles.

Green Peas, California.....	2 00 @2 15
Niles Peas.....	2 00 @2 15

WOOL.

The market is lifeless, so far as trading in offerings of grease wools from first hands is concerned. This is almost invariably the case during the month of February. Stocks are now of such insignificant proportions as not to admit of any noteworthy business. In a few weeks Spring wool will begin to arrive, and is expected to meet with prompt attention from buyers. Indications continue favorable for a firm market for coming clip.

SPRING.

Oregon Eastern, choice.....	13 @16
Oregon Eastern, fair to good.....	11 @13
Oregon Valley.....	17 @20

FALL.

Humboldt and Mendocino.....	16 @17½
Middle Counties, defective.....	9 @12
Northern, free.....	11 @14
Northern, defective.....	9 @11

Southern Mountain.....	9 @11
San Joaquin Plains.....	—@—
San Joaquin Lamb.....	—@—

HOPS.

Same inactivity as previously noted continues to be experienced. Offerings are mostly low grade, while the little inquiry which exists is principally for choice to fancy, with such practically out of market. Quotable values remain nominally as before.

Good to choice, 1899 crop.....	6 @9
--------------------------------	------

HAY AND STRAW.

While business in the hay trade continues of a dragging and generally unsatisfactory character, the market is no lower than last quoted. In fact, some holders are less disposed to crowd stocks to sale than a few weeks ago, owing to the absence of rain and the need of the same in a large portion of southern California. There is certainly a probability of hay values hardening to some extent if the dry weather continues. Straw is quiet at former rates.

Wheat.....	6 50 @9 50
Wheat and Oat.....	6 50 @9 00
Oat.....	6 00 @8 00
Barley.....	5 00 @7 00
Alfalfa.....	5 50 @7 00
Stock.....	4 50 @5 50
Compressed.....	6 50 @9 50
Straw, ½ bale.....	30 @45

MILLSTUFFS.

Bran was in good supply as compared with the demand, and market continued to favor the consumer. Middlings and Shorts were not materially lower, but the general tendency was to easier figures. Market for Rolled Barley was firm. Prices for Milled Corn ruled steady.

Bran, ½ ton.....	11 50 @12 50
Middlings.....	15 00 @17 00
Shorts, Oregon.....	12 00 @14 50
Barley, Rolled.....	16 50 @17 00
Cornmeal.....	23 00 @23 50
Cracked Corn.....	24 00 @24 50

SEEDS.

Recent shipments of Alfalfa seed to Australia have reduced stocks of this variety to small proportions; they have not been, in fact, heavy at any time this season; market is firm at last quoted advance. Little doing in other seeds and values remain nominally as previously noted.

Mustard, Trieste.....	3 25 @3 50
Mustard, Yellow.....	4 50 @4 75
Flax.....	2 00 @2 25
Canary.....	3¼ @4
Rape.....	2 @3
Hemp.....	4 @4¼
Timothy.....	4 @4¼
Alfalfa, Utah.....	8 @9½

BAGS AND BAGGING.

The Grain Bag market is showing very little life. With present prospects of there being an ample supply for the season's requirements, there is no pronounced inclination observable to contract for forward delivery. Quotable rates are unchanged. There is beginning to be inquiry for Wool Sacks for coming clip; market is tolerably firm at figures quoted.

Calcutta Grain Bags, buyer June-July.....	6¼@—
Calcutta Grain Bags, spot.....	6¼@—
San Francisco Grain Bags, 22x36, spot.....	6¼@—
Staic Prison Bags, ½ 100.....	5 65@—
Wool Sacks, 4 lbs.....	—@32¼
Wool Sacks, 3½ lbs.....	—@28¼
Fleece Twine.....	7¼@—
Gunnies.....	—@12¼
Bean Bags.....	4¼@5¼
Fruit Sacks, cotton.....	6¼@7¼

HIDES, PELTS AND TALLOW.

The absence of firmness last noted in the market for Wet Salted Hides continues to be experienced. Values for Dry Hides and Calf Skins remain without quotable change, but market is not firm. Pelts and Tallow are commanding fairly steady rates, but demand is not particularly active at full figures.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11¼	10¼
Medium Steers, 48 to 56 lbs.....	10¼	9¼
Light Steers, under 48 lbs.....	10	9
Heavy Cow Hides, over 50 lbs.....	10	9
Light Cow Hides, under 50 lbs.....	10	9
Wet Salted Kip.....	10	9
Wet Salted Veal.....	10	9
Wet Salted Calf.....	11	10
Dry Hides.....	18	14
Dry Kip and Veal, 11 to 16 lbs.....	17	13
Dry Calf, under 4 lbs.....	18	15
Salted Horse Hides, large.....	2 50 @—	—
Salted Horse Hides, medium.....	2 00 @—	—
Salted Horse Hides, small.....	1 00 @—	—
Dry Horse Hides, large.....	2 00 @—	—
Dry Horse Hides, small.....	75 @1 00	—
Dry Colts' Hides.....	50 @75	—
Pelts, long wool, ½ skin.....	1 00 @1 25	—
Pelts, medium, ½ skin.....	70 @90	—
Pelts, short wool, ½ skin.....	35 @60	—
Pelts, sheathing, ½ skin.....	20 @35	—
Deer Skins, best summer.....	27¼ @30	—
Deer Skins, good medium.....	20 @22¼	—

Deer Skins, thin winter.....	—@10
Elk Hides.....	10 @12
Tallow, good quality.....	4¼ @5
Tallow, No. 2.....	4 @4¼
Goat Skins, perfect.....	30 @37½
Goat Skins, damaged.....	10 @20
Kid Skins.....	5 @10

HONEY.

Supplies and demand are both at present limited, which is to be expected at the close of a light crop year. Business doing is mostly of a small jobbing character and at practically same figures as have been current for some time past.

Extracted, White Liquid.....	7¼ @8
Extracted, Light Amber.....	7 @7¼
Extracted, Amber.....	5 @5¼
White Comb, 1b frames.....	11½ @12¼
Amber Comb.....	8 @10

BEEWAX.

Market is firm at current rates, with demand fair and offerings of very small volume.

Good to choice, light, ½ lb.....	26 @27
Dark.....	24 @25

LIVE STOCK AND MEATS.

Market for Beef shows an easy tone for prime quality, such being in ample supply, while the cheaper grades are offered very sparingly. Veal is not in large receipt, and is meeting with a rather firm market. Mutton and Lamb brought much the same figures as last quoted, but market could not be termed firm. Hogs commanded fully as good figures as preceding week, with demand equal to the supply, especially of small and medium sizes. Some sales were made up to 6c., but this was not a quotable figure.

Beef, first quality, dressed, net ½ lb.....	6¼ @7
Beef, second quality.....	6¼ @7
Beef, third quality.....	6 @—
Mutton—ewes, 7@7¼c; wethers.....	7¼ @8
Hogs, hard grain fed, medium.....	5¼ @5½
Hogs, small, fat.....	5¼ @5½
Hogs, large, hard.....	5¼ @—
Hogs, acorn-fed.....	—@—
Hogs, feeders.....	5 @5½
Hogs, country dressed.....	5¼ @6
Veal, small, ½ lb.....	7 @7½
Veal, large, ½ lb.....	7 @8
Lamb, spring, ½ lb.....	11 @—

POULTRY.

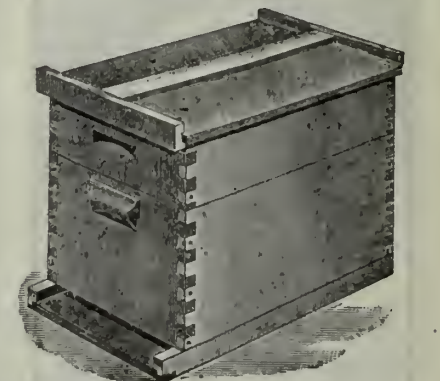
With only moderate arrivals of Eastern poultry and quite limited receipts of California stock, the market was in the main firm. Turkeys being about the only exception, and values for these were not so depressed as during preceding week. Young Chickens in fine condition were in good request at comparatively stiff figures.

Turkeys, dressed, ½ lb.....	12 @14
Turkeys, live hens, ½ lb.....	11 @12
Turkeys, five gobblers, ½ lb.....	9 @11
Hens, California, ½ dozen.....	4 50 @5 00
Roosters, old.....	4 50 @5 00
Roosters, young (full-grown).....	6 00 @6 50
Fryers.....	5 50 @6 00
Broilers, large.....	5 00 @5 50
Broilers, small.....	3 50 @4 50
Ducks, ½ dozen.....	4 50 @5 50
Geese, ½ pair.....	1 75 @2 00
Goslings, ½ pair.....	2 50 @3 00
Pigeons, old, ½ dozen.....	1 25 @1 50
Pigeons, young.....	2 00 @2 50

BUTTER.

There have been further declines in

Bee
Keepers'
SUPPLIES.



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values, and at the reduced figures the majority of receivers were unable to keep stocks moving as rapidly as they desired. There was some shipping trade, and there is likely to be considerable outward movement in the near future, with prices on a still lower plane than at present.

Creamery, extras, # lb.	21	@
Creamery, firsts.	20	@
Creamery, seconds.	19	@
Dairy, select.	18	@ 19
Dairy, seconds.	16 1/2	@ 17 1/2
Dairy, soft and weedy.	—	@
Mixed store.	14	@ 16
Creamery in tubs.	18	@ 21
Pickled Roll.	—	@
Firkin, California, choice to select.	19	@ 21
Firkin, common to fair.	16	@ 18

CHEESE.

The market continues to incline against sellers, and is not likely to show any change for the better for some weeks to come. New cheese is in larger supply and is relatively cheaper than well-seasoned stock, there being no heavy offerings of latter. There is likely to be considerable shipping demand in the near future, but only at comparatively low figures.

California, fancy flat, new.	9 1/2	@
California, good to choice.	8 1/2	@ 9
California, fair to good.	8	@ 8 1/2
California Cheddar.	—	@
California, "Young Americas".	9	@ 10 1/2

EGGS.

Lower values have been established in the egg market, but there is evidence that prices have nearly if not quite touched bedrock. Some dealers have commenced storing, paying for this purpose 12c for choice eggs. Only in a small way and for favorite marks was any decided advance on above figure realized. The range in prices was narrow, as nearly all eggs are now showing good quality.

California, select, large, white and fresh.	13 1/2	@ 14
California, select, irregular color & size.	12	@ 13
California, good to choice store.	11 1/2	@ 12
Eastern, as to section and grading.	—	@
Eastern, cold storage.	—	@

VEGETABLES.

Spring vegetables showed increased receipt, mostly from southern points, and the market was generally easier, all changes in quotations for new vegetables being to lower values. In the line of Winter vegetables the display was light. Onions of choice to select quality were offered sparingly and met with a firm market.

Asparagus, # lb.	7	@ 12 1/2
Beans, String, # lb.	5	@ 8
Cabbage, choice garden, # 100.	40	@
Cauliflower, # dozen.	50	@
Cucumbers, hothouse, # doz.	1 00	@ 1 50
Egg Plant, # lb.	8	@ 10
Garlic, # lb.	5	@
Onions, Yellow, Cal., good to choice.	2 00	@ 2 20
Onions, Oregon, # cental.	2 10	@ 2 30
Peas, Sweet, garden, # lb.	2 1/2	@ 4
Peppers, Green Chile, # lb.	4	@ 5
Peppers, Bell, # lb.	—	@
Rhubarb, # lb.	5	@ 7
Squash, Marrowfat, # ton.	—	@
Squash, Summer, # box	1 00	@ 1 25
Tomatoes, Los Angeles, # box.	50	@ 1 00
Tomatoes, Bay, # box.	—	@

POTATOES.

There were large quantities of frosted and otherwise seriously defective potatoes on the market, such stock meeting with slow sale at low figures, some very poor failing to bring lowest quotations. Choice to select table potatoes were not plentiful, and brought as a rule good figures, some fancy Burbanks selling up to \$1.20, although this was not a quotable price. Sweets were in light receipt and high.

Burbanks, River, # cental.	50	@ 1 00
Burbanks, Bay counties, # cental.	60	@ 1 05
Burbanks, Humboldt.	75	@ 1 05
Burbanks, Oregon.	60	@ 1 10
River Reds.	—	@
Burbanks, Salinas, # cental.	—	@
Early Rose.	80	@ 90
Garnet Chile.	80	@ 90
Peerless.	1 20	@ 1 25
New Potatoes, # lb.	2	@ 3
Sweet, River, # cental.	—	@
Sweet Merced.	—	@

The Fruit Market.

FRESH FRUITS.

Apples are the only deciduous fruit now offering and these are in very limited stock. The market is firm for all merchantable qualities, and especially so for fancy table fruit. In a small way high-grade table Apples bring stiffer figures than are quotable. Strawberries are in light receipt and mostly too poor to be sought after. Sales are mainly within range of \$5@9 per chest for common to fairly good.

Apples, fancy, 4-tier box.	1 50	@ 1 75
Apples, good to choice, # 50-lb box.	1 00	@ 1 50
Apples, common to fair, # 50-lb box.	50	@ 75

DRIED FRUITS.

In the market for cured and evaporated fruits one of the duller weeks of the season has been experienced. With dullness there is naturally an absence of firmness, and if any special selling pressure were

exerted, lower values would be established than are now nominally current. There is very little stock in first hands, however, aside from Prunes, and jobbers are not disposed to cut rates to any noteworthy extent in order to effect sales, although they are far from satisfied with the immediate outlook. It is questionable whether much good would result or any special activity would be developed at this date by cutting prices, which for most kinds are now quite reasonable. Dealers realize this and are governing themselves accordingly. It sometimes occurs that the shading of values drives off buyers instead of attracts them, and any action likely to have this effect should certainly be avoided, in the interest of both producer and jobber. The highest priced stock on the market to-day is the most readily placed, demonstrating that it is by no means always a question of prices. Quotations for Apples and Peaches show a reduction of about half a cent per pound, but beyond this there are no changes to record. As above indicated, however, values are largely nominal. Were there any noteworthy demand, these or firmer figures would prevail, while under existing dullness, it is doubtful if the granting of marked concessions would lead to any special movement of either Prunes, Peaches, Apples or Figs, the kinds most in evidence. Prunes are in the main steadily held at previously quoted low range, but there are some lots outside of combination control, for which 1c or 1 1/2c less than quotations might be accepted.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb.	10 1/2	@ 12
Apricots, Royal, fancy.	12 1/2	@ 13
Apricots, Moorpark.	13	@ 15
Apples, in 50-lb boxes, rings, pressed, fancy.	7	@
Apples, 50-lb boxes, rings, pressed, good to choice.	5 1/2	@ 6 1/2
Figs, White, fancy pressed.	5 1/2	@ 6 1/2
Peaches, unpeeled, good to choice.	5 1/2	@ 6 1/2
Peaches, unpeeled, fancy.	7	@ 7 1/2
Peaches, peeled, in boxes.	12 1/2	@ 15
Pears, unpeeled Bartlett's, halved, fancy.	9	@ 10
Pears, halved, unpeeled Bartlett's.	6 1/2	@ 8
Pears, quartered, unpeeled Bartlett's.	6 1/2	@ 7 1/2
Plums, Black, pitted.	6 1/2	@ 7 1/2
Plums, White and Red.	7	@ 8
Prunes, in sacks 40-50s.	4	@ 4 1/2
50-60s.	3 1/2	@ 3 3/4
60-70s.	3 1/4	@ 3 1/2
70-80s.	3 1/4	@
80-90s.	3	@
90-100s.	2 1/2	@
110-130s.	2	@
Prunes in boxes, 1/2c higher for 25-lb boxes, 1/2c higher for 50-lb boxes.	—	@
4 sizes Santa Claras and equal.	2 1/2	@
4 sizes San Joaquin and Northern.	2 1/4	@ 2 1/2
Prunes, Silver.	4	@ 7

COMMON SUN-DRIED.

Apples, sliced.	4	@ 5
Apples, quartered.	4	@ 5
Figs, Black.	—	@ 3
Figs, White.	3	@ 3 1/4
Peaches, unpeeled.	5	@ 6

RAISINS.

There is no wholesale business to record and not much doing in a jobbing way. There are no large supplies, but more trade than exists could be satisfied. Quotable rates as fixed by the Growers' Association remain as before.

F. O. B. FRESNO DELIVERY.

London Layers, 6-crown, # box.	—	@
do do 5-crown, # box.	—	@
do do 4-crown, # box.	—	@
do do 3-crown, # box.	1 60	@
do do 2-crown, # box.	1 50	@
Valencia Layers, # 20-lb box.	80	@ 1 00
(Usual advance for fractions.)	—	@
Loose Muscatel, 3-crown.	6 1/4	@
Loose Muscatel, seedless.	5	@
Pacifics.—2-crown loose Muscatel, 5 1/4c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c.	—	@
Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.	—	@
(Above prices for loose raisins are for 50-lb boxes.)	—	@
Thompson Seedless.—Bleached fancy, # lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.	—	@
Sultanas.—Bleached fancy, # lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.	—	@
Loose Valencia.—Fancy, # lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.	—	@
Valencia Clusters.—Fancy, # lb., 7c; choice, 6c; standard, 5c.	—	@

CITRUS FRUITS.

Oranges were in better request than previous week, the weather being more favorable for consumers to take hold. Values did not improve, but were, in fact, easier than last quoted, offerings showing increase and keeping ahead of the demand. Lemons met with a little more custom than for some weeks preceding, but supplies continued liberal and market remained easy in tone. Limes were in light stock and were firmly held.

Oranges—Navels, # box.	1 25	@ 2 50
California Seedlings.	75	@ 1 25
California Mandarin, # small box.	—	@
Grape Fruit, # box.	—	@
Lemons—California, select, # box.	2 25	@ 2 50
California, good to choice.	1 75	@ 2 00
California, common to fair.	1 00	@ 1 50
Limes—Mexican, # box.	5 50	@ 6 00
California, small box.	50	@ 1 25

NUTS.

A quiet market is noted for Almonds and Walnuts, and to effect noteworthy

transfers lower prices than lately current would have to be accepted. Peanut market is lightly stocked and remains against buyers.

California Almonds, shelled.	14	@ 17
California Almonds, paper shell, # lb.	10	@ 11
California Almonds, soft shell.	7	@ 8
California Almonds, hard shell.	4	@ 5
Walnuts, White, soft shell.	9	@ 10
Walnuts, White, California, standard.	7	@ 8
Chestnuts, California Italian.	8	@ 10
Peanuts, California, fair to prime.	5	@ 6
Peanuts, Eastern, hand-picked.	6	@ 6 1/2
Pine Nuts.	5	@ 6

WINE.

The market is quiet, with no changes to record in quotable rates. Dry wines of the vintage of 1899 are quotable at 15@20c per gallon, as to quantity and quality, San Francisco delivery, the latter figure being obtainable only for small quantities of superior quality. New Claret of good average quality is offering at 16c per gallon in a wholesale way, and is not meeting with immediate custom. It is the exception, however, where producers are crowding stock upon the market.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/4 sacks.	174,616	4,029,429
Wheat, centals.	308,571	3,883,792
Barley, centals.	42,495	4,308,469
Oats, centals.	5,850	612,748
Corn, centals.	630	94,384
Rye, centals.	400	89,460
Beans, sacks.	1,889	319,597
Potatoes, sacks.	20,260	900,255
Onions, sacks.	1,174	132,401
Hay, tons.	2,506	114,967
Wool, bales.	340	36,177
Hops, hales.	164	9,100

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/4 sacks.	155,141	2,729,144
Wheat, centals.	214,528	3,303,540
Barley, centals.	10,031	3,463,785
Oats, centals.	678	30,850
Corn, centals.	274	12,540
Beans, sacks.	711	20,721
Hay, bales.	4,701	88,155
Wool, pounds.	84,069	3,968,867
Hops, pounds.	52,380	941,437
Honey, cases.	2	3,277
Potatoes, packages.	287	55,199

California Dried Fruit at New York.

NEW YORK, Feb. 28.—California dried fruits: Market quiet but steady. Evaporated apples, common, 5@6c; prime wire tray, 6@6 1/2c; choice, 7@7 1/2c; fancy, 8@8 1/2c. Prunes, 3 1/2@6c. Apricots, Royal, 13@15c; Moorpark, 15@18c. Peaches, unpeeled, 7 1/2@9c; peeled, 18@22c.

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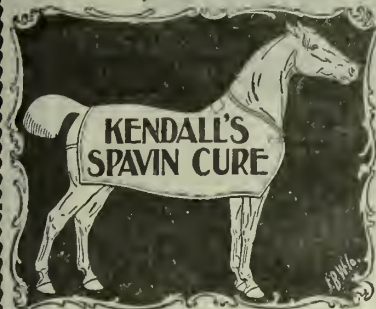
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DR. B. J. KENDALL CO., Enosburg Falls, Vt.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING FEB. 13, 1900.

- 643,444.—PADDLE WHEEL—J. S. Allison, Portland, Or.
643,449.—RAIL ANCHOR—S. B. Anderson, Hartford, Wash.
643,263.—WHEELED SCRAPER—W. C. Bradford, Arbuckle, Cal.
643,245.—SLIDING DOOR LOCK—J. A. Eastman, Fruitvale, Cal.
643,373.—PARCEL REST—Gabriel & Atkinson, Portland, Or.
643,266.—DISPLAY HOLDER FOR HATS—Sarah E. Griggs, Woodland, Cal.
643,132.—BUGGY TOPS—C. R. Hesseltine, Creston, Wash.
643,269.—PLATE ICE MACHINE—J. C. Kitton, S. F.
643,249.—POTATO DIGGER—W. Kretzer, Baker City, Or.
643,271.—LOOM—J. H. Northrop, Tustin, Cal.
643,233.—GOLD WASHER—F. C. Pinnell, Lodge, Cal.
643,275.—PICTURE—A. N. Polymath, Los Angeles, Cal.
643,306.—CARBURETER—V. J. A. Rey, S. F.
643,608.—WAVE MOTOR—C. F. A. Roell, Los Angeles, Cal.
643,207.—BOILER—E. J. Sabin, Colusa, Cal.
643,543.—GARMLNT—Ella M. Schrader, Seattle, Wash.
643,552.—FRAMING JOINT—C. C. Squires, Seattle, Wash.
643,557.—WAVE MOTOR—S. P. Swearingen, Pasadena, Cal.
643,612.—DOOR CATCH—M. J. Thuestad, S. F.
642,213.—SHOEMAKER'S OUTFIT—H. Waters, Bisbee, Ariz.
642,438.—STOVE—J. E. & J. Wormald, Spokane, Wash.
643,182.—CAR COUPLING—O. Yates, The Dalles, Or.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

PLATE ICE MACHINE.—J. C. Kitton, San Francisco, Cal., assignor of one-half to C. C. Hutchinson, Oakland, Cal. No. 643,269. Dated Feb. 13, 1900. This invention relates to an apparatus for cooling air which may afterwards be used under any condition where cooling or refrigerating is needed. It may be applied to refrigerating air in storage chambers of any character. It is particularly applicable to the freezing of ice upon the surfaces of large plates which are submerged in fresh water. The ice at first forms rapidly upon the surfaces of these plates when cooled from the interior by usual methods, but as the thickness of the ice increases, being a poor conductor, the rigidity of the formation decreases and it takes several days to form a thickness of ice as great as desired. The object of this application is to reduce the temperature of water between the gradually forming plates of ice so as to increase the rapidity of its formation by practically freezing from the outside as well as that adjacent

to the freezing plate. The invention consists of a brine tank having a coil through which is circulated a refrigerating fluid, and in conjunction with this a rotary blower or air-forcing mechanism having a discharge pipe which enters the brine tank, and the air rising through the brine will be reduced to a very low temperature. By means of an air-conducting pipe connecting the upper portion of the brine tank with the lower portion of the water tank, and suitable distributing mechanism, the air thus refrigerated is passed through the water to be frozen, and, rising to the top, is again conducted to the air-forcing mechanism, by which it is returned to the brine tank and thus circulated.

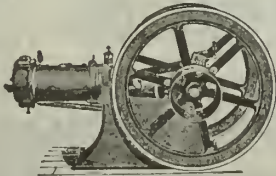
DISPLAY HOLDER FOR HATS.—Sarah E. Griggs, Woodland, Cal. No. 643,266. Dated Feb. 13, 1900. The object of this invention is to provide a convenient removable attachment for any sort of base bracket, or other holder, made of sufficiently stout wires and providing the requisite elasticity with finger holes or loops, so that the arms can be pressed toward each other for the purpose of easily removing or replacing a hat without damage to the fragile structure.

WHEELED SCRAPER.—W. C. Bradford, Arbuckle, Cal. No. 643,263. Dated Feb. 13, 1900. This invention relates to improvements in scrapers which are mounted upon wheels, and comprise an excavating and transporting pan and carrier. It consists of a two-part pan, acting as a scraper, these parts being suspended from a framework which is mounted upon bearing wheels, and in conjunction with this are mechanisms by which the pan is lowered and tilted so that the cutting edge will engage the ground, and the device thereby be loaded; a means by which the pan is suspended above the ground when loaded so as to be transported to any desired point, and means for opening and separating the two parts to discharge the load at any desired point.

SLIDING DOOR LOCK.—J. A. Eastman, Fruitvale, Cal. No. 643,245. Dated Feb. 13, 1900. The object of this invention is to provide a lock which may be used for doors, sashes and other parts which are to be locked together. It is especially applicable to folding doors, the edges of which are brought together when the doors are closed, and which are separated by moving them apart. When such doors are large and heavy and settle or get out of line it is difficult to keep them in condition to be properly locked. In this invention the difficulty is overcome by providing for such movements of the locking bolt as will compensate for any settling of one part of the door or the other. This is effected by first projecting the locking bolt forward into the larger portion of the slot of the opposite door, then dropping it down until the head is engaged with the narrow portion of the slot and finally drawing it back against said slotted portion so that it will pull the doors close together in case they are inclined to separate. The opposite movement of the bolt serves to first clear it from the slotted plate, then raise it, then withdraw it through the wider portion of the slot and into the casing of its own door. By suitably arranged mechanism all these movements are effected by the turning of the key in one direction or the other.

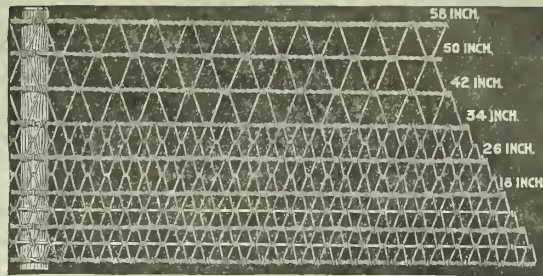


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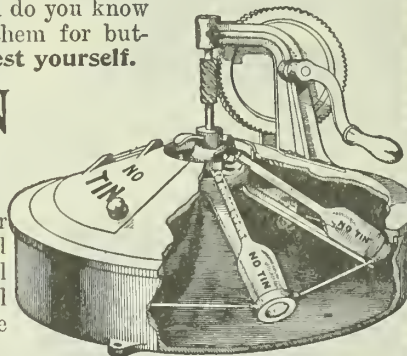
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The NO-TIN Tester

is made in six-bottle size for farmer's use; it is driven by hand and is substantially built. Will last a life-time; fitted with ball bearings, and it does not rattle and does not wear out.



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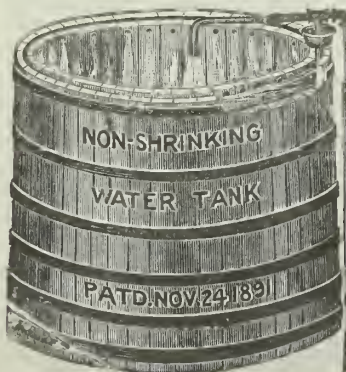
with those of other makes and bear in mind that the U. S., in addition to GIVING MORE FOR THE MONEY, SKIM CLEANER, RUN EASIER, LAST LONGER, you must acknowledge that the U. S. are the BEST and MOST PROFITABLE SEPARATORS TO BUY.

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The only one suitable for dry, hot climates. COSTS NO MORE THAN COMMON.

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The original and genuine preventive vaccine remedy to Black Leg Officially endorsed in all the cattle-raising States Successfully used upon 1,500,000 head in the U. S. A. during the last four years. Write for official endorsements and testimonials from the largest and most prominent stock raisers of the country. "Single" treatment vaccine for ordinary stock; "Double" treatment vaccine for choice herds.

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54 Fifth Ave., CHICAGO.

Patrons of Husbandry.

From the Worthy Master.

TO THE EDITOR:—On Saturday, the 17th inst., the Worthy Matron and myself had the pleasure of visiting Stockton Grange and enjoying the kind hospitality of Bro. and Sister Overhiser and Bro. and Sister Root.

There was a good attendance at the forenoon session of the Grange and some important business transacted. The members protested against the destruction of the famous sequoias of Calaveras county.

After a bounteous feast the Master of the State Grange at an open meeting installed the officers of Stockton and Union Granges. This was followed by music and speeches. All returned to their homes with renewed courage and earnest purpose to carry out the principles upon which the Order is founded.

With the commercial and manufacturing facilities of Stockton the farmers have but to hold on and improve their opportunities to be prosperous and happy.

Remember that the Grange is the only national farmers' organization, and if the farmer would be successful he must ally himself with that permanent and beneficial order.

G. W. WORTHEN.

San Jose, Feb. 19.

Save the Big Trees.

TO THE EDITOR:—What are known as the "Mammoth Tree Grove" and "South Park Grove of Big Trees," species of Sequoia gigantea, located in Calaveras county, California, constituting one of the notable landmarks of the State and which have made the State famous throughout the world, are now held in private ownership. The owner of these trees is negotiating for their sale to an Eastern party, who proposes to convert them into lumber for the market. As the destruction of these trees would be an irreparable loss to the State and to science, and as prompt action is necessary to avoid their destruction, each subordinate Grange in the State is asked to at once get out a petition praying Congress to take immediate steps to acquire these groves as a national reservation.

J. S. TAYLOR, State Lecturer.

Napa, Feb. 24.

Elk Grove Grange.

TO THE EDITOR:—Elk Grove Grange held its regular meeting on Feb. 17th. There was a large attendance. After the usual routine of business, Worthy Master L. Dart, in a neat speech on behalf of Elk Grove Grange, presented to Worthy Past Master Schlmeier a costly gold pen. Next Sister Schlmeier was requested to come to the Master's desk and was presented with an elegant album, which will be filled in the near future with the photographs of members of Elk Grove Grange. These tokens were presented to the Brother and Sister for their untiring labor and devotion to the Grange. After a well-read prayer by Bro. W. Bradford and closing of the Grange, the members marched to the banquet hall, where dainty refreshments were served, which all heartily enjoyed.

Elk Grove, Feb. 18.

Tulare Grange.

Tulare Grange met at its hall on the 17th. In the absence of the Worthy Master, Past Master Shoemaker pre-

Beware of Ointments for Catarrh That Contain Mercury.

As mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is tenfold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

Sold by druggists, price 75c. per bottle. Hall's Family Pills are the best.

sided, who conferred the third and fourth degrees.

Bro. Kirkpatrick, who joined a Grange in Washington, N. C., thirty-three years ago, and was a member of the first National Grange, paid a fraternal visit at the meeting, when he was pleased to say that, although he belonged to other fraternal and social orders, in none did the lectures, emblems and ceremonies so forcefully impress on his mind our duty to our Creator or His power and goodness.

The committee appointed at the last meeting to prepare for a Farmers' Institute on March 30th and 31st reported progress and were continued.

A communication was received from Prof. D. T. Fowler, conductor of Farmers' Institutes, saying that he and Prof. Hayne will attend. He also sent a list of subjects from which the Grange might select the discourses or lectures of Prof. Hayne and himself.

The Grange voted to have a two-day institute, with forenoon, afternoon and evening sessions. During the Institute Prof. Fowler is requested to speak on the following subjects: 1. The educational value of Farmers' Institutes. 2. Orchard topics. 3. Dairy herd and creamery. 4. Irrigation, to include consideration of water supply from streams and underground pumps, pumping powers and storage reservoirs for farms.

Prof. Hayne is requested to speak on: 1. Resistant vines. 2. Why our farm products spoil. 3. Agriculture in the Philippines; also other subjects not yet selected.

Hon. Geo. C. Perkins, U. S. S., having sent Tulare Grange a supply of Year Books of the Department of Agriculture for 1898 and a supply of garden seeds, and Hon. J. C. Needham, M. C., having also sent the Grange a supply of vegetable seeds, the Secretary was requested to acknowledge the receipt of the same with the thanks of the Grange.

At the last previous meeting of the Grange the Lecturer requested Bros. Styles and Shoemaker to prepare papers on "How we can best advertise our Grange and its benefit to farmers." Both the brothers read well-written papers and were applauded.

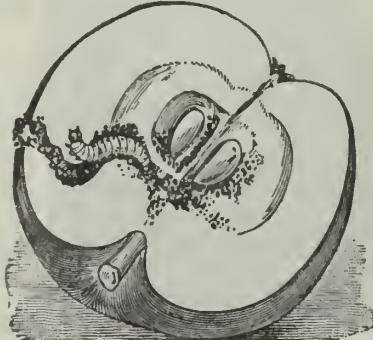
The Lecturer announced that at the next meeting of the Grange he will call up for discussion:

Resolved, Irrigation is essential to success in agriculture in Tulare county, and our best dependency for irrigating water is on the flow of the streams rather than from underground waters. Bros. Weigle and Slaughter will argue the affirmative side and Bros. Mull and Morris the negative side.

If agreeable to Selma Grange, it was decided to have a joint picnic on some day in the early part of April, to be named by Selma Grange. J. T.

SPRAYING FRUIT TREES.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment but a necessity.



Our readers will do well to write Wm. Stahl, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contains much valuable information, and may be had for the asking.

J. Whitehorn, A. M., Ph D., 1315 Linden St., Oakland, Cal., makes claim of ability to successfully and permanently cure stammering, no matter of how long standing. To any one subject to such affliction cure would be grateful, and the experience Prof. Whitehorn has and the testimonials obtained from numerous Californians that he has cured of stammering justifies faith in his statements. If afflicted with defect of speech write to him.

A fine new dairy catalogue has been issued by the De Laval Separator Co. and will be sent post paid to any address. A postal to the De Laval Separator Co., 74 Cortlandt St., N. Y. City, will bring it.

"ALPHA-DE LAVAL" CREAM SEPARATORS

THE 20TH CENTURY "ALPHA" DE LAVAL machines are the very acme of perfection in cream separators—embodying the new and perfected development of the "ALPHA" disc principle.

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In a word, the 20TH CENTURY "ALPHA" machine, in any of its sizes, is simply beyond the pale of comparison with anything else that natural force and human ingenuity has yet devised in the shape of a cream separator. It stands in a class by itself—far above and beyond all possible competition.

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In no respect like the Sherwood or other heavy steel rigging. Constructed on an entirely different principle. Light (weight 37 lbs.), very strong and perfectly flexible. Consists of two short wood bows, bent to fit the horse and not project beyond the side, suspended back of forelegs by padded back bands and covered by adjustable padded belly bands. Short leather tugs with adjustable buckles and cockeys connect the bow ends with the hames, making the draft direct and just as in the old harness. The team is coupled up by a free-jointed straight-wood evener, hooked into the loop in each bow. Can be separated or unharnessed in an instant. Each horse perfectly independent in his movements and can close up or spread apart in working. A back strap connects the harness with the back pad and a short draft chain runs from the evener-clevis to the load. A perfect all-round Farmers' Handy Harness for all low down field work. Used and approved by the best up-to-date farmers and fruit growers in the country. We don't furnish collars, headstalls or lines. Price, \$14.50, cash with order, freight prepaid. If not perfectly satisfactory return at our expense and money will be refunded. In ordering give size collar used.

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CLOD CRUSHER AND LEVELER.

Meets the most exacting requirements of all soils for all crops under all conditions. Crushes, cuts, lifts, pulverizes, turns and levels. Made of Cast Steel and Wrought Iron—lasts always. Light draft; cheapest. Riding Harrow made. Best Pulverizer on earth. Sizes 3 to 13½ ft.

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Greatly improves the quality and increases the crop of Fruits, Wheat, Barley, Oats, Roots, etc., as it provides at low cost an abundant store of available and durable phosphates which meet the requirements of nature in a ready, rational and remunerative manner. The sales of Thomas' Phosphate Powder have increased in thirteen years from 50 to 1,000,000 tons per year.

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VETERINARIAN.

Answers by Dr. Creely.

TREATMENT FOR LAMENESS.

TO THE EDITOR:—I have a young driving horse that is afflicted with lameness. It comes and goes. As I can see no reason for lameness, I think he must have the rheumatism. Can you give me a remedy to cure it?—W. D. BAILEY, Escondido, Cal.

Locate the lameness and it is then an easy matter to treat. It may be shoulder, navicular, splint, ligamentous or tendonous lameness. Each would be treated differently. It is not rheumatic.

TUBERCULIN.

TO THE EDITOR:—I would like to get enough of the tuberculin virus to test twelve cows. Will you tell me where it can be had and what is the cost of it?—W. F. DUNCAN, San Juan.

It is sold by the Pasteur Vaccine Co.; office, Examiner Bldg., San Francisco. The cost is about 10 cents per dose. Use the concentrated, if you do not care to test at once.

TWO JAW TROUBLES.

TO THE EDITOR:—I have a thoroughbred bull calf ten months old with a lump growing under the jaw. It is not fast to the bone, but in the skin, and extends up between the jaw bones, just a little back of where the bone forks. It is hard, but not hard like a bone, and about the size of a duck egg.

Another, a steer, eighteen months old, has a lump under one jaw bone and fast to it, or an enlargement of the bone. It is gradually increasing in size. He is losing flesh, and eating seems to hurt him. When eating hay he takes a mouthful, raises his head, muzzle straight forward, and acts as if it was difficult and a painful operation to gather it in.—JOHN A. WHETSTONE, Eddy, Colo.

The first is a tubercular enlargement and can be removed by cutting it; or paint with iodine and after a time it will grow larger, when it can be lanced, or the iodine may cause it to become absorbed.

The latter is a clear case of actinomycosis, or "lumpy jaw." The specific is two drachms daily of iodide of potash. Stick a sharp knife as deep as possible into the enlargement and saturate with compound tincture of iodine.

DR. E. J. CREELY.

510 Golden Gate Ave., S. F.

Writers and Readers Both Pleased.

TO THE EDITOR:—I am sending you my paper which I read to-day at Stanford, Jr., University. If you can make any use of it, do so. You always take such good pains with articles that it is a pleasure to furnish them.

EDW. M. EHRHORN.

Mountain View, Feb. 20.

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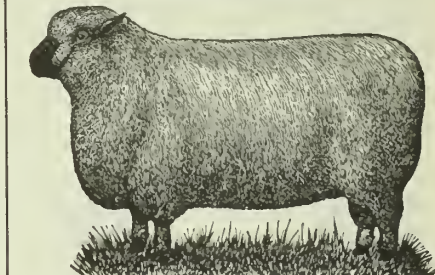
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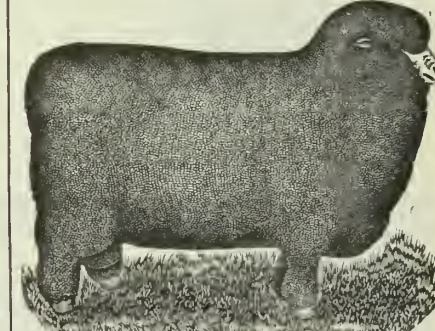


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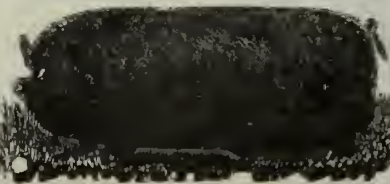


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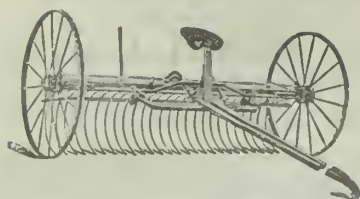
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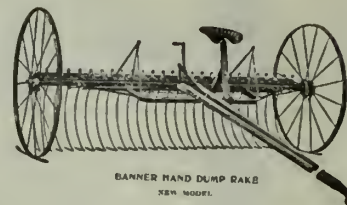
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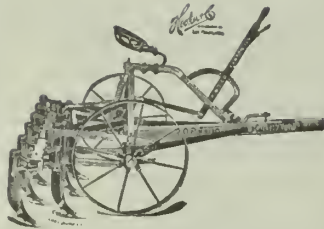
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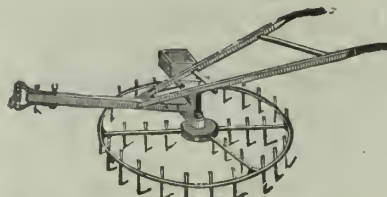
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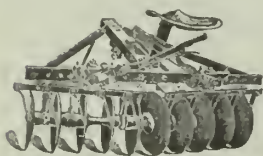
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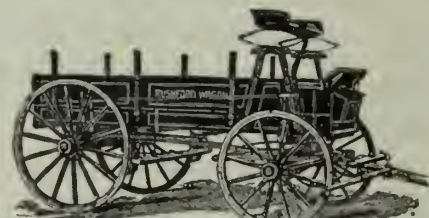
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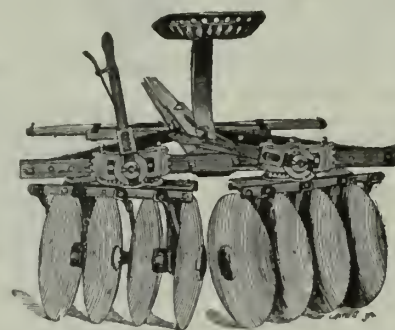
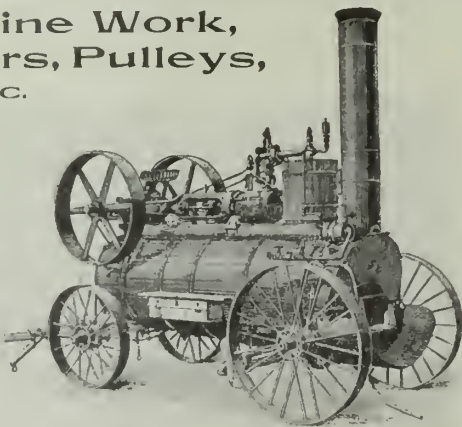
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 10.

SAN FRANCISCO, SATURDAY, MARCH 10, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

The Codlin Moth.

Correspondents remind us that it is time to say something about the codlin moth, to the end that all may be warned to be ready to save their fruit and to avoid loss and disappointment. It is a subject which we have freely commented upon from time to time, and yet too many still let their pear and apple crops go by default. There is one sovereign remedy for the codlin moth, and that is the spray of Paris green or other arsenite. Its efficacy, when properly done and pure material is used, is demonstrated beyond question. It is possible to secure from 80% to 90% of sound fruit where, without treatment, not 10% would escape the worms. There is nothing more clearly demonstrated in the successful use of insecticides than the surety of the defense by Paris green. It is, however, quite easy to miss success, and too many have forsaken the remedy by reason of certain misses they have made. Failures have followed from improper spraying; using a shower, instead of a fine mist, and allowing the poison to flow off the foliage and fruit in the running or dripping water. It is essential that the poison go from a fine nozzle in a mist or cloud, and, as soon as the mist covers the fruit and leaves with a film of moisture, stop the spray on those surfaces.

Impure Paris green: Thousands of dollars have been lost by using Paris green which has been debased by adulterants. Cases have been known where Paris green has had less than half its proper content of poison.

The engravings on this page are from a University Bulletin by Prof. C. W. Woodworth and Mr. G. E. Colby, which goes very carefully into the subject of the treatment of the codlin moth and the standing of the various arsenite poisons which are available. The publication is especially full and valuable upon the subject of adulterations of Paris green. It is demonstrated that there are easy ways of making preliminary tests of Paris green. Two of these are suggested by the pictures used herewith. One consists in taking a very small portion of Paris green—what one could easily pick up on the point of a penknife—place this upon a piece of glass, holding the glass at an angle; jarring the lower edge will cause the little pile of green to move down the inclined surface, leaving behind it a bright green track, if the sample is pure; but in the case of many adulterated or impure samples the track would be white, or pale green. The method of doing this is clearly shown in the accompanying plate. The glass test is particularly useful in comparing a number of samples, and after one has acquired some experience it becomes quite reliable. It does not enable one to detect the recent forms of arsenic adulterations, and should never be considered as conclusive evidence of purity.

Those who are handy with the microscope can get a very valuable suggestion as to the purity of the material by placing a sample on a slip of glass and treating in the way just described for the glass test; the glass slip is then put under the microscope and examined with a medium power objective, about $\frac{1}{4}$ inch. The Paris green will be seen in the form of clean, round balls, and in a perfectly pure sample these are all that can be seen. In impure samples there will be observed, in addition to these green

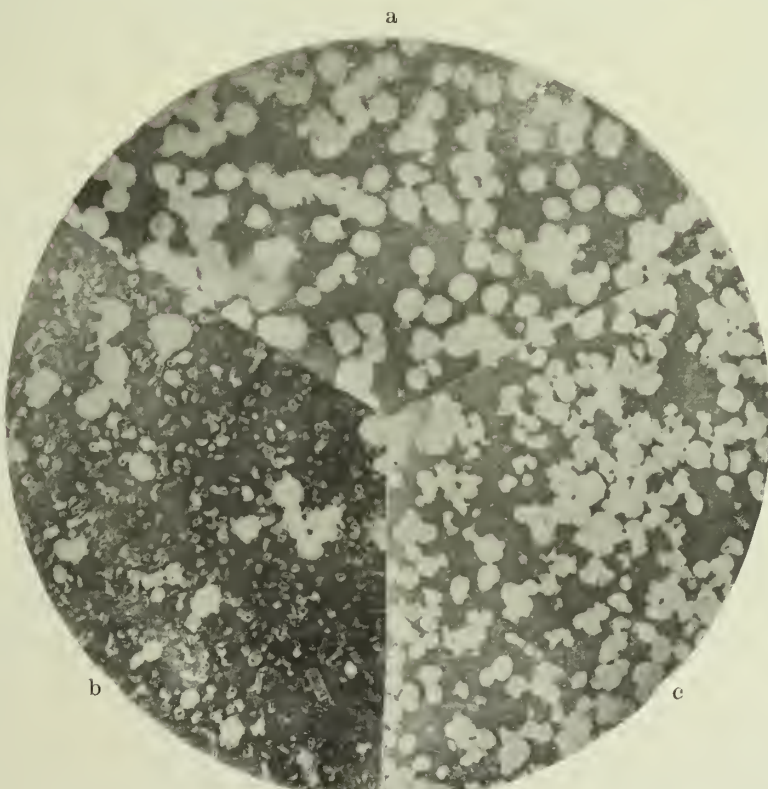
spheres, a considerable quantity of material of crystalline or irregular shape, usually of white color, the pure green being quite as distinct from the adulterants as seen under the microscope, and as easily recognized, as wheat can be distinguished from the dirt that might be mixed with it.

There is more difficulty in distinguishing Paris green containing an excess of free arsenic. This sometimes is added in the form of a powder, and is then as easily recognized as any other form of adulterant; but when added in the process of manufacture it is firmly attached to the particles of Paris

arsenic soda and lime mixture which some are using with much satisfaction. After one has succeeded in getting a good effective poison there is still a good chance of failure through insufficient use of the poison. Many have sprayed once, counted their duty done and have wondered why their late fruit should have been wormy. One spraying may suffice for an early apple or pear, but medium or late fruit should have two or three sprayings to reach the offspring of later broods of moths. The first spraying should be done, as a rule, later than was formerly advised. The moth does not deposit eggs in the blossom as was supposed. It is seldom that the moth is about at blossom time. She waits for warmer air and deposits her eggs anywhere on the fruit or even on the leaves of the tree. By this time the apple may have gained some size. It is a fact, however, that the little worms on emerging from the eggs generally seek the calyx or eye of the fruit for entrance, and it is important to have poison there. For this reason the first spraying should be done before the sepals close over the eye of the apple. The worm will make its way through these turned-down sepals and its poison should be ready for it inside. It is easier to thoroughly poison this cavity if the spraying is done while the little fruit still stands upright. Subsequent sprayings must be done, however, without regard to the position of the fruit. The later hatchlings of worms are more apt to enter through the sides of the well-grown fruit, especially at the point where the fruits are in contact with each other, and it is necessary to have the fruit continually covered with a film of the poison while these later broods are hatching out. Spraying at intervals of three to four weeks to be continued, less or more in number, according to the lateness of maturity of the variety.

There is no appreciable danger in the use of Paris green upon these fruits. It has been demonstrated again and again, by analysis and practical test, that the most frequently sprayed fruit does not retain poison dangerous to the higher animals. In one experiment the total collection of the poison, by the most careful chemical methods, from a whole bushel of apples, did not contain arsenic enough to constitute a tonic dose for a man, and he would have to eat the whole bushel at a sitting to get that much. It is also true that correct spraying of the trees does not make herbage growing under the tree unsafe for grazing animals. This does not count for much in California, where our trees are mostly growing on cleanly cultivated ground; but experiments made long ago at the East showed that the fact is as stated when the spraying is properly done.

In saving fruit from the codlin moth it is worth while to have the fallen fruit eaten by stock or poultry; it is worth while to bark the trees and trap the larvæ; it is worth while to use only new boxes and to guard against introduction of the pests in all sorts of conveyances, but it is most important of all, and supplementary to all other protective measures, to spray correctly and repeatedly with Paris green, one pound to 200 gallons of water, or with one of the home-made arsenical preparations described in the University publication. The material sold at present is of higher grade than formerly, but no one should buy Paris green without test of its character.



a—Pure. b—Common adulteration. c—Low grade, with arsenic.

Paris Green and Adulterations, as They Appear Under the Microscope.

green, and only produces the effect of making them somewhat irregular, and causing a tendency toward sticking together. A study of the circular figure on this page will enable one to distinguish the pure green from the adulterated sample. The size of the



Glass Slip Test for Some Adulterations in Paris Green.

particles of Paris green may be larger or smaller, according to the method of manufacture, and the grade of the material may vary greatly and can only be properly determined by chemical tests.

Prof. Woodworth's bulletin gives full account of the various substitutes for Paris green, including the

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E. J. WICKSON.....Horticultural Editor.

San Francisco, March 10, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Paris Green and Adulterations, as They Appear Under the Microscope; Glass Slip Test for Some Adulterations in Paris Green, 145.
EDITORIAL.—The Codlin Moth, 145. The Week, 146.
QUERIES AND REPLIES.—Attar of Roses; The Mustard Crop; Height to Head Trees; Manuring Young Trees; Castor Beans; Insect Eggs; Guernsey Cattle, 147.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending March 5, 1900, 147.
HORTICULTURE.—Orchard Cultivation; Winter Ripening of Strawberries; Tar and Resin for Tree Wounds, 148.
FRUIT PRESERVATION.—Prune Curing and Marketing, 148.
FLORIST AND GARDENER.—Bird of Paradise Plant; Potato Growing in Southern California, 149.
STATE BOARD OF AGRICULTURE.—California Agriculture in 1899, 150.
AGRICULTURAL REVIEW.—151.
THE HOME CIRCLE.—The Padre's Secret; "A Little Comedy," 152. The Years; To Clean Ribbons; Washing Windows in Winter; Ten Uses for Lemons; A Corn Kitchen; Only Time Lawton Was Frightened, 153.
THE MARKETS.—Produce Market; Fruit Markets, 154-155.
THE VETERINARIAN.—Answers by Dr. Creely—Treatment for Bloat; Lung Fever, 156.
PATRONS OF HUSBANDRY.—Topics for March, 158. From the Worthy Secretary, 159.
MISCELLANEOUS.—What Advertisers Usually Say, 147. Notices of Recent Patents; List of U. S. Patents for Pacific Coast Inventors, 156. Irrigation and Drainage, 159.

The Week.

The storm, since our last issue, has been wide and has brought refreshment to all parts of the State. At the south it seems to come too late for some crops and is hardly likely to be large enough to accomplish the full saturation of the soil which has been longed for; but it will do a great deal of good and relieve much anxiety. In other parts of the State the downfall is enough to insure crops. The report of the Weather Bureau on the opposite page is unusually interesting this week.

There has been another active week in wheat shipping; six cargoes cleared and three or four more went into the stream to sail as soon as crews can be caught. Still, spot wheat is a little off this week, and futures are worse than spot. It seems to be a local humor, based upon rain or something else, because distant markets, though weak, are not bad enough to warrant such scaling down. Barley, on the other hand, is unchanged, in spite of the rain, and that shows strength in it. Millers are raising rolled barley in sympathy. Corn is higher through an Eastern advance; oats unchanged and rye lower. Mill-stuffs are unchanged. Hay is not lower, but, owing to improved crop outlook, only fancy wheat hay is expected to hold up. Beef and mutton are quiet and unchanged; lamb and veal are a little lower; hogs are quite free to arrive, but still hold their prices well. Butter is fairly steady, as shipping helps out with the surplus. Cheese is easy and unchanged. There is talk of cheese for the Eastern markets, which are bare, but shippers do not offer enough to move the product yet. Eggs are about the same as last week; the surplus is going into storage and the rains have checked receipts, so the downward rush has been arrested. All poultry is moderately firm and unchanged. Apples are scarce and high. Some pears have been brought out of cold storage, but they seem out of season and do not meet much of a welcome. Oranges are weaker, as so many arrive, and the weather has been too cool for their demand. There seem to be too many of lower grades, but fancy Navels sell well. Lemons are barely steady. There is nothing new in dried fruit; more activity is expected after the Eastern cold spell breaks up. Potatoes are clearing up well, even lower grades are moving, and fancy are too scarce to quote. Some Nevada potatoes are coming, but they have not sold much above the best river potatoes. Onions from Australia are held at \$3.75 per cental. Beans are much the same, with moderate movement and light stocks held too high to suit buyers for the Eastern markets, where there is a demand for them.

We hope all our readers did not conclude from

what we said last week that England is entering upon a sort of educational millenium. If we had any such idea as we wrote it has been rudely dispelled since then, for we now read in continued discussion of the movement for agricultural education in England sentiments which would make us either weep or swear, if we were subject to such emotional extremes. For there arose one of the high ones and declared in the council that he was opposed to educational reform, because you "could not teach science to a child of eleven years." Just think of that from a nation which holds the Boers to be out of date! We did not suppose it needed even twice saying to announce the fact that science is the easiest thing in the world to teach a child of that age, but it would seem to be still held that irregular verbs and arithmetical rules are the foreordained mind food for the child. While such views are held it will be difficult to secure educational reform along science or nature study lines; but fortunately there are few remnants like the speaker whose words we quote. The elements of science as learned by correct sight and knowledge of the objects nearest to the child are the most charming and at the same time the most rational educational material.

California apple growers are suffering from professional expertness at Eastern shipping points. The Fruitman's Guide tells about examination of California box apples in cold storage in New York. Several were requested by wire to examine a certain lot, and there was a division of opinion as to whether the lot was hard and sound enough to ship to Europe. The jury stood two to two, and now the shipper is as near a solution of the question as he was before. This looks very much like the expert medical and chirographical testimony which they have in the courts. It is possible to balance it perfectly so that the jury is befogged and not enlightened and still it costs frightfully. We presume the apple shipper will find it just the same and by the time the experts are through with them the apples will go by their condition anyhow. It is a game with a chance only to lose.

Talking of frosts, we never saw growers of deciduous fruits so aroused on the subject of smudging and other means of averting low temperatures as they are this winter. We have pointed many times to the full accounts of the subject which have appeared in the PACIFIC RURAL PRESS during the last two years, and we presume more than usual preparations will be made. While this is being done, we hope those who have trees not yet active (and there are such in some parts of the State) will try the whitewash method of retarding growth. This method, proposed by Prof. Whitten of the Missouri State University, has already been explained in our columns. Prof. Whitten says he has discovered that, if the peach trees are thoroughly coated with a whitewash spray, the development of the buds will be retarded for a sufficient length of time to escape the freezing weather. The practical experiments have covered a period of three years and tests have been made on both a large and a small scale. On the peach trees in some of the tests the unwhitened buds have been killed, while the whitened buds have been saved. Although the whitened buds in other tests were later in development, yet in the late spring these had overtaken the unwhitened buds, and the development from that time on was the same for the buds treated and those not treated.

Whether H. D. Watson of Kearney, Nebraska, learned to like large ways of doing things during his life in California twenty years ago, or whether the taste was native to him, we do not know. It will, however, interest some of his old acquaintances here to know that Mr. Watson is a sort of an alfalfa king in Nebraska, and has 2500 acres, and is demonstrating the success of the plant on the uplands and proposes to proceed in the same line until he has twice as much. According to Prof. Wing, who recently wrote of a visit to Watson's farm in the Breeders' Gazette, the alfalfa is growing on loess deposits, naturally fertile, yet "as you look at it where it has been cut down in great banks, almost perpendicular, it seems light-colored, almost dust-colored, and of very uniform texture throughout. It hardly looks to have in it enough humus for a corn soil. Corn

does grow thereon, as was proved this year, yet it is doubtless during the wetter seasons that corn thrives best on these hills. But what a depth of soil for alfalfa!" This is Mr. Watson's alfalfa proposition—150 feet to water—and yet some Californians have an idea that alfalfa will not go down to one-tenth of that distance in the light loams of the interior valley of California! Perhaps we shall have to get this graduated Californian to come back from Nebraska and tell us something about alfalfa.

A meeting of a number of the cattle kings of California was held in this city on Monday to consider the lease proposition for public grazing lands which is now before Congress. There was some conflict of views but after all discussion a memorial to Congress was adopted, of which this quotation gives the drift:

We request a speedy and favorable action upon a law to classify lands in the arid and semi-arid regions, segregating such tracts as are more valuable for grazing than for any other purpose, and leasing the same as grazing ranges, for the use of actual stock-owners and the owners of abutting agricultural lands, reserving mineral and such other rights as will equalize benefits, induce actual agricultural settlement where the same is possible, and above all, arrest the present rapid destruction of the sole value of these ranges, which consists in their natural grasses and other forage.

The memorial further sets forth the fact that this land is used by herdsmen as a common, and that they overstock it and destroy its value without regard to the future. This system, it is claimed, not only destroys the grazing but serves to make the land that is stripped more arid and affects disastrously the moisture of the whole intermountain region. Leasing the land would put responsibility on the lessee and he would not destroy that which he would need for future use. This is the argument upon the policy if leasing the public lands is upheld.

We begin publication in this issue of the report of the State Board of Agriculture as prepared by Secretary Shields, of which we gave commendatory notice a few issues back. We undertake this publication so that the careful and comprehensive compilation of important facts by Mr. Shields may be available to the agricultural public at the earliest moment. In due time the document will appear from the State Printer, but would never reach so many readers, nor reach them while the facts are fresh and of greatest use, as through our pages. It is because we think the report is worthy of this widest dissemination that we requested the copy which has been kindly furnished us by the officers of the State Board. The printing will speedily proceed to its completion.

The Raisin Growers' Association has released one of the packers from his contract, so that he can meet the other packers on common ground. The proposition to avoid all such issues in the future, by the Association doing its own packing, seems to be making due progress.

The Greek currant people are getting widely awake to the issue in the United States. It seems that the Grecian consul at Chicago sent to the minister of foreign affairs at Athens a clipping from a Greek newspaper printed in Chicago, which has the following statements:

Both the Corinthian and California currants are on sale in Chicago. The former is far superior in quality, but the Californians by a special process clean their currants and extract the seed, and in Chicago they are subjected to another process of cleaning. They thus acquire a greater value than the Corinthian currants, which are for the most part mixed with sand and are unclean and filthy. The currants are used in cakes and syrup, and also as a separate article of food.

This is a queer mix-up of the seeded raisin and the seedless raisin, which the Greeks think is some kind of a currant with the seed extracted. The Greek consul thinks something ought to be done, and he proposes to the currant merchants of Greece that they send to Chicago 50,000 liters (47,317 quarts) of currants of select quality, packed in 200,000 neat pasteboard boxes, for distribution, which boxes should be covered with lavish advertisements. The expense of packing, freight, tariff and distribution, he says, would not exceed \$2000. Evidently the Greeks are disposed to learn advertising arts from the barbarians.

We notice that Eastern fruit growers are claiming that in the Japanese plums they have a fruit in which they can compete with California in size and beauty. The claim itself is quite an admission.

QUERIES AND REPLIES.

Attar of Roses.

TO THE EDITOR:—How can one obtain the rose oil ready for sale and where can one buy the apparatus to distil it and at about what price? Or can I construct such an apparatus myself?—READER, Napa.

All these perfume enterprises, or at least many of them, seem so impracticable in this country because of the lack of cheap labor for their elaborate processes of flower picking and subsequent manipulation that little space can be given to them. A very satisfactory pamphlet entitled "Can Perfumery Farming Succeed in the United States," by E. S. Steele, can be had by application to the Secretary of Agriculture, Washington, D. C. It gives a full discussion of growing and manufacturing methods and appliances and pictures a still which any good mechanic can make. Mr. Steele is indisposed to concede that such enterprises cannot be made to pay in this country, though it does not appear to us that he makes out a very good case for them. He thinks the home help might be profitably employed, but the young American seems to have no difficulty in getting more profitable employment when he has a disposition for it. Some perfumes and oils which can be made from citrus blooms and fruits could be easily made and material is available in almost any quantity, but it is something of a question as to whether the world has any use for such an increased product in these lines as California can furnish.

The Mustard Crop.

TO THE EDITOR:—I would like to know about what the mustard crop of California is and where it is grown; also when it is sown and harvested.—MERCHANT, New York City.

It is rather difficult to get exact information concerning the mustard production in this State, because it is grown chiefly as a volunteer crop and the amount harvested directly dependent upon the price the previous season. The production last year was about 18,000 sacks of ninety pounds each. The range from year to year is from 15,000 to 30,000 sacks. It is in good part secured from wild plants, though there is some regularly cultivated. The wild plant starts with the rains in the fall, makes a winter growth, and is harvested in the spring with something like the ordinary methods of grain harvesting. Nearly all of the crop comes from northern Santa Barbara county, though in years when high prices are expected the area would be extended a certain distance up the coast on similar lands. The rains in that district have been reasonably favorable this year, and it is probable that on the basis of high prices somewhat larger crops will be gathered.

Height to Head Trees.

TO THE EDITOR:—What is the proper height to cut young apricot trees which are just set out, and what height should walnut trees be cut, or should one let them have their own way for branching?—NEWCOMER, Orange county.

These questions are fully answered in our book on "California Fruits," and have frequently been discussed in these columns. To get the low-headed trees, which are best for this State, the young tree must be cut back to about 12 or 15 inches, and the branches allowed to form from buds near the top of this short stem, or else the stems should be kept longer, say, 24 inches, and shoots selected so the branches will be farther separated in their attachment to the trunk, but the lowest branch should be as near the ground in one case as in the other. This latter method of cutting back and spacing branches gives the stronger tree. The walnut should not be cut back in this way. It should have a longer stem. Formerly the head of the tree was preferred at 5 or 6 feet from the ground, but, more recently, growers are advocating about 4 feet, with training and trimming so as to give the branches an upward growth. The walnut should have little pruning, except what is necessary to give it a good shape.

Manuring Young Trees.

TO THE EDITOR:—I am desirous of knowing how to apply fine stable manure to young orange trees that I am about to set out, to get best results. Is there any danger of damaging them by applying to trees when I set them out?—NEWCOMER, Orange county.

Fine stable manure in California is apt to be very dry and to have escaped fermentation. As soon as it

becomes moistened, fermentation sets in, heat is generated, and, if such fine manure is put into the hole with the tree, it is far more likely to do harm than good. We would always apply such manure on the surface as a mulch around the tree, as then it will become after a time mixed with the top soil by cultivation, or we would apply it in the basins or furrows used in irrigation, and its plant food would be distributed through the soil. Well rotted manure may be used to advantage in excavations, if it is kept far enough away from contact with the roots at first, but the fine manure of this dry country has to be handled with caution in connection with tree planting.

Castor Beans.

TO THE EDITOR:—Do castor oil beans grow well in California, and what variety is grown for oil? What is the mode of extracting the oil? Is there any market for the castor oil beans?—D. S., Geyserville.

They grow splendidly. The variety is the one which is largely imported from India by our oil makers. There are two methods of extraction, the press and chemical extraction. Both can only be done in properly equipped establishments with profit. There is a market in this city for castor beans at the oil mills, but the price at which imported beans can be landed makes it unprofitable for the Californian to grow the crop, which is a troublesome one to harvest.

Insect Eggs.

TO THE EDITOR:—I enclose you a few samples of insect eggs found on our prune trees. What are they? What is the remedy if they are injurious? The small round white and brown ones are in considerable numbers. They appear to have been laid by the same kind of moth, but why the difference in color? We finished spraying with lime, sulphur and salt two weeks ago, but they all appear to have been deposited since then.—Jos. R. Don, Woodland.

The small round eggs are laid by the canker worm moth. See comments in last week's PACIFIC RURAL PRESS. The brown is the proper color: the white are empty shells. These eggs are often laid late in the winter. The larger yellow, spindle-shaped eggs you send are laid by a ladybird and should not be destroyed.

Guernsey Cattle.

TO THE EDITOR:—Is there a herd of thoroughbred Guernsey cattle in the State, and, if so, where are they?—C. E. BYRNS, Woodland.

Guernsey cattle are scarce in this State and those who have good registered stock should advertise. Some who had the cattle a few years ago returned to their Jersey interests after selling the stock for export. There is a chance to develop the Guernsey interest in this State. We do not know who now has the Guernsey.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, March 7, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Minimum Temperature for the Week.	Maximum Temperature for the Week.
Eureka.....	1.27	41.97	24.00	36.33	40	66
Red Bluff.....	1.14	17.61	15.33	21.46	42	58
Sacramento.....	.70	14.59	7.93	16.76	41	66
San Francisco.....	1.13	16.24	8.00	19.59	46	66
Fresno.....	.84	7.02	3.86	7.73	38	70
Independence.....	.04	2.16	1.15	4.43	33	66
San Luis Obispo.....	2.04	14.61	7.15	15.81	35	78
Los Angeles.....	.98	5.55	2.93	15.26	40	80
San Diego.....	.48	3.12	3.73	8.51	48	74
Yuma.....	.00	0.76	1.34	2.78	44	84

What Advertisers Usually Say.

WATSONVILLE, CAL., Feb. 28, 1900.

PACIFIC RURAL PRESS, San Francisco, Cal.:—Kindly continue our advertisement. The small advertisement we placed in your paper a few weeks ago has certainly been the most profitable investment we have ever made in the advertising line. We get more responses to the advertisement in your paper than we get from any other five mediums we are using. We have already in the past two weeks sold, through your journal directly, over \$200 worth of Belgians. We get inquiries from all over the State referring to the PACIFIC RURAL PRESS.

BRITAIN RABBITRY,
J. E. STEINHAUSER & Co.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 5, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

Nearly normal temperatures have prevailed throughout the State, with generally pleasant and favorable weather for agriculturists. Light frosts occurred in sections, not damaging to fruit or other crops. Up to Friday night or Saturday morning no rain had fallen, and in some sections, particularly in the south, the drouth was becoming serious. Grain was in fair condition in the northern and central portions, but had commenced to turn yellow in some localities, and the soil was becoming crusted. In southern California the condition of grain had become alarming, and in some sections the early sown was dead. The heavy rainfall of Saturday and Sunday, general throughout the State, was quite beneficial in the northern section, though not especially needed. In the San Joaquin valley it greatly improved the condition of all growing crops and was sufficient for present purposes. In southern California, where the precipitation was about 1 inch, fruit trees, pasturage and late sown grain were materially benefited, but it is feared that the rain came too late to save the wheat crop, and that barley will make only poor hay. The rainfall for the storm amounted to 1 inch at San Francisco; Red Bluff, 0.78; Sacramento, 0.62; Fresno, 0.82; San Luis Obispo, 2.04; Los Angeles, 0.98; San Diego, 0.48; Bakersfield, 0.38; Merced, 0.90; Hanford, 0.81; Angiola, 0.95; Reedley, 1.50; Visalia, 1.04; Tulare, 1.03. There has been quite a heavy snowfall in the mountains, both in the Coast Range and in the Sierras. This insures a supply of water for future use. Previous to this storm the visible snow supply was comparatively small; at present the depth of the snow in the high Sierras ranges from 5 to 10 feet.

Deciduous fruits are advancing rapidly, nearly all varieties being in bloom in all parts of the State, and present prospects are good for large crops. Almonds are nearly beyond danger from frost.

SACRAMENTO VALLEY.

Nearly normal temperatures have prevailed during the week, and conditions have been favorable for the growth of all crops, except in some localities, where dry northerly winds slightly damaged grain. The rain of Saturday and Sunday was not needed in most sections, as there was considerable moisture still in the ground, but it will undoubtedly benefit late sown grain and pasturage. Early sown grain is in excellent condition and prospects for heavy crops are improving. Farmers are still plowing and barley planting is in progress. Almonds are said to be beyond the danger point from frost. Nearly all deciduous fruits are well advanced, and the crop will be larger than the average if not injured by late spring frosts. Frosts occurred during the week in some sections, but they were too light to cause damage.

COAST AND BAY SECTIONS.

Continued warm, pleasant weather during the first part of the week was beneficial to growing crops in the central and northern counties, and enabled farmers to nearly complete the work of plowing and seeding, but in the southern counties the drought became more serious, grain turning yellow in places and the soil being too dry and hard for cultivating. The heavy rainfall of Saturday and Sunday has materially improved conditions throughout the section, and especially in the south. It is now believed that the ground is well saturated, and that the remainder of the grain crops can be sown, with good assurance of an abundant yield. Pasturage had also commenced to suffer from drought in some localities, and its condition will be greatly improved by the rain. Some sections report that the acreage in grain is already larger than last season's. Almonds are well set and probably beyond danger from frost. Deciduous fruits are advancing rapidly, with indications of large crops if not injured by frost.

SAN JOAQUIN VALLEY.

The week opened with clear, warm weather, accompanied on the 26th by brisk northerly winds, which greatly dried out the soil. In some localities the late sown grain was beginning to show the effects of the long dry spell, but the early sown grain and pasturage was holding out quite well. Some farmers are still busy plowing summer-fallow, but in places the ground was reported as too dry to plow during the early part of the week. Almonds and apricots are beginning to loaf out and apple and pear buds are swelling rapidly. In the vicinity of Lodi many small vineyards are being set out. Orchards in the vicinity of Tulare are being irrigated. The heavy rains of Saturday and Sunday, amounting to more than an inch in some sections, were of immense benefit to all growing crops, and, though not sufficient to mature the crops, are ample for the present. Fruit prospect was also improved by the rain.

SOUTHERN CALIFORNIA.

Warm, dry weather continued during the week up to Saturday, and the condition of grain became more serious; growth had ceased, and in some localities the earliest sown was dead, the second sowing dying and the later sown greatly in danger. Pasturage was also dying and feed becoming scarce. Rain on the 3rd and 4th was of great benefit to late sown grain, pasturage and all fruit trees, but it is feared the precipitation came too late to save grain, although a light crop may be harvested in some sections. The barley hay crop was also in very poor condition, but was probably benefited by the rain. Orange shipments continue. Deciduous fruits are in bloom, and prospect is good for fair crops.

HORTICULTURE.

Orchard Cultivation.

By E. J. YOKAM, at the Highlands Farmers' Club,
San Bernardino County.

Three objects are to be attained in the cultivation of the orchard, namely, the destruction of weeds, the aeration of the soil and the conservation of moisture. Weeds being great consumers of soil moisture, the importance of preventing their growth is too apparent to admit of discussion.

USES OF AIR.—In its natural state the soil has the appearance of being a compact, solid mass; but, in fact, only 50% of its bulk is composed of soil grains. The remainder of the space is occupied by air and water, the presence of both being imperatively necessary to the life and growth of the plants. The oxygen breaks down and decomposes the organic matter in the soil and renders the plant food available, and it is claimed by some scientific authorities that a portion of the free nitrogen of the air is taken up by the roots and utilized in nourishing the tree. Therefore, air is just as essential among the soil particles as moisture. And, if by irrigation the soil becomes saturated with water and the air is excluded, the soil becomes sodden and sour, the roots decay and the tree or plant dies.

USES OF WATER.—The vital necessity of an adequate supply of soil moisture is apparent when we consider that water constitutes 60% to 95% of the structure of growing plants, and that the amount of water consumed during the growing period is several hundred times the weight of the matured crop. Water also performs the important function of dissolving and holding in solution the mineral elements of the soil, and, being taken up by the roots, carries them to the leaves—the digestive organs—where, by the wonderful processes of nature's laboratory, those minerals are transformed into the solid parts of the tree.

Although the quantity of moisture demanded by different plants varies, it is found that vegetation thrives best when 13% to 20% of water is present in the soil. The water-holding capacity of soils varies with their texture. In its natural state the light or sandy soil contains only 5% to 10% of water, while the heavy clay soil contains 15% to 20%. This difference is due to the size of the soil grains and the intervening spaces, and the consequent relative resistance offered to the flow of gravity water through the soil.

FORMS OF WATER.—Water may exist in the soil in three forms, only two of which are vital to this discussion. Free or gravity water, furnished by rains and irrigation—though the source of supply for plant life—flows downwardly and is not used directly by the plant. Capillary water flows independently of gravity, chiefly from below toward the surface, and it is by this the tree and plant are fed. Careful experiments at Government stations show that under most favorable conditions—fine texture and uniform structure—capillary action is strong enough to raise the water from the depth of 5 or 6 feet.

USES OF CULTIVATION.—When the surface of the ground is left undisturbed and becomes hard, capillary action is established directly with the atmosphere, and the soil moisture passes off rapidly by evaporation. Cultivation breaks up this capillary connection by destroying the minute pores or tubes through which the water escapes, forms a non-conductor soil mulch and forces the moisture to remain in the soil below, where it is accessible to the tree and plant roots.

Mr. King, author of the book entitled "The Soil," determined in an experiment test the comparative loss of moisture by evaporation from plowed and unplowed land. He found that in seven days—from April 29 to May 6—the loss of moisture from the hard land exceeded that from the plowed land in the ratio of 1.75 inches of rainfall, or 198 tons of water, per acre.

The first step in conserving moisture is to prepare the soil to absorb water, either by plowing or deep cultivation, leaving the ground rough and porous. This coarse cultivation should follow every heavy rain, thus keeping the surface mellow to receive and store the winter rains, which otherwise would run off and be wasted, with liability of damage by washing.

SHALL THE PLOW BE USED?—Whether an orchard should be plowed after reaching the bearing age is a debatable question. The tendency to form an artificial hardpan at the bottom of the furrow slice, especially in heavy soils, is generally conceded. Another objection to plowing is the cutting and wounding of the feeder roots of the tree, thus curtailing its vitality and reducing its productive power, while rendering it more susceptible to injury from its enemies. Plowing also involves considerable extra labor of the orchardist, and at best leaves quite a portion of the soil unstirred. The writer is of the opinion that thorough and frequent deep cultivation—say, 6 inches deep—with coarse teeth during the rainy season is quite as effective for conserving moisture, is less

injurious to the tree roots and keeps the surface more even and in better condition to irrigate.

SUMMER CULTIVATION.—Upon the cessation of the winter rains the soil should be thoroughly pulverized to the depth of 6 inches, creating a dust mulch to prevent evaporation of the moisture stored in the soil, holding it in reserve for the trees' use during the dry, hot season. Frequent cultivations—twice a month at least—should follow through the summer with a fine-tooth implement to maintain this soft mulch. The ground should be left as smooth as possible, to reduce the evaporation surface to the minimum, though it must not be packed. The practice of drawing a plank after the cultivator is not advisable.

Winter Ripening of Strawberries.

W. M. Sheldon of Anaheim gives the Gazette an account of his practice with strawberries which may be suggestive to other growers. A rich, luscious, ripe strawberry in midwinter is a rarity, and just how they can be produced abundantly many would like to know. Usually the berries that are on the market are picked before they are ripe, and eaten by tourists, who, with the help of an abundance of sugar, manage to get the whiff of a flavor of the strawberry from the concoction.

WINTER RIPENING.—It is claimed by some that because of a "lack of sunshine" the berries do not color well in cool weather, and in support of their theory point to berries that are partly rotten before they are ripe. Put in other words, "too much wind" keeps the air and ground cool, so that the plant does not have a vigorous growth, and cannot ripen its fruit quick enough to prevent the sun from scalding the upper surface, or decay setting in where there is contact with the moist earth. This season, owing to its warmth, has been very favorable, and one man has improved the "climate" for his berries by driving a few stakes for the support of some sash over his plants, and has reaped quite a reward in having a nice lot of berries to put on the market at a good price.

PLANTING OUT.—To succeed well one should commence the summer before by letting the most vigorous plants set a limited quantity of runners, and have them ready to transplant about September or October; then cultivate and irrigate in such a manner that the plants will make a steady, healthy growth. Many plant in rows 1 foot apart, and run water in every space. This is not good policy. If every third row were omitted, and the ground kept cultivated around the plants with a toothed hoe or rake, not too deeply, of course, instead of its being tramped upon when wet and made hard, much better results would be obtained. The plants that win in the long run are neither starved nor forced, but have received the best of care during their entire lifetime. After trying several kinds in one locality, it will generally be found that some do much better than others.

VARIETIES.—New kinds from places where the climate is very different should be tested at least two years, for a plant, like a person, must be acclimated before it can do its best. Along the coast in southern California Laxton's Noble does well the entire year, while only eight or ten miles inland the Arizona alone is planted, and large quantities grown, though it does not fruit much during cool weather. Some have tried the Saltzer, and recommend it for winter fruiting.

CULTURE.—Only absolutely frostless places can be used successfully, or some form of protection which will prevent that disadvantage. The use of water in just the right proportion to produce good, firm berries is essential; a moderate amount twice a week is better than too much once a week. Stirring the soil frequently lets the sunshine and air in, so it is warmed, and growth is promoted much more than if left in a soggy condition. Some kinds will set more berries than the plant can mature of a large size, hence a lot of small ones which are almost worthless. A better policy would be to thin out and grow only large berries of good shape. It costs less effort to plant to produce a half-ounce berry than several that would amount to the same weight.

Generally, when a plant bears profusely for a time, it will take a rest of its own accord and commence again later. With some growers this peculiarity is taken advantage of to prolong the season, and it seems as though in time, when all these tendencies are known, that the expert grower of the future will be producing fruit every month in the year, or when the price is the highest. Care should be taken in fertilizing not to use anything that will breed grubs, as they often do much damage. As the berries color better when the sun has a fair chance to warm all sides, they can be propped up on stones or something and thus ripened more evenly, or, when found nearly ripe, turn the green side toward the sun for a day or two. Let the berries get thoroughly ripe, even though it necessitates going over the bed six days in the week—people are ready to buy choice fruit just that often.

Tar and Resin for Tree Wounds.

TO THE EDITOR:—At Stanford University fruit growers' meeting there was some discussion as to whether the use of a paint made of tar and resin for tree wounds was detrimental. Some thought coal tar in any shape likely to be prejudicial. I quoted the experience of a friend of mine, Mr. Daniel Snively of Guberville, Santa Clara county, to the contrary.

Mr. Snively is an exceedingly reliable, successful and practical man. I wrote to him to know if he had had any reason to change his opinion as to the usefulness of the tar-resin compound. I asked consent to publish his reply. Here it is. EDWARD BERWICK.

Monterey, Feb. 28, 1900.

MR. SNIVELY'S EXPERIENCE.

I used coal tar and resin for the first time last season. I had some trees that I had grafted and cut very heavily. I thought I would find some cheaper covering than wax, and so used coal tar and resin, about \$2 to the gallon, and put it on at boiling heat. It did better than grafting wax for me, as it made a sort of a varnish and did not injure the bark at all. It is looking very well yet and does not oxidize and scale as paint does. I have used wax put on in the same manner, and like the tar and resin better. I am now putting some onto scars, but find it will blister on account of the sap starting to flow, so I think one must do such work during the dormant season, say in January.

I have used gum shellac dissolved in alcohol, but it is too expensive for such purposes. One is at times compelled to thin out large limbs from trees, as too many are often permitted to grow at the start, and in a large thinning out it is quite an item of expense to properly cover the wounds caused thereby. Paint is not good, as it contains oil, and that deadens the bark on the rim and does not heal very well.

I use a small oil stove, having one burner, keep it hot, and take a warm day, as it cools so quickly one must not be long about it. The tar does not damage that I can see. I have used coal tar alone for the borer and applied it hot at the base of the trees, and saw no ill effects from doing so. I am quite aware that all do not agree with me, but I am giving my own experience only.

To melt the resin, I pulverize it and stir it in, until it is melted and thoroughly mixed. DANIEL SNIVELY.

FRUIT PRESERVATION.

Prune Curing and Marketing.

By S. F. LEIB of San Jose at the Fruit Growers' Meetings at Stanford University.

GATHERING FRUIT.—The tree should not be shaken unless you do it yourself. Then it will not be overdone. But do not do it at all. There is nothing gained. The prunes will all fall if you let them alone. Try it and see. It won't cost you a cent to wait, and you will save that much expense, and the dried product will be darker, better, glossier and heavier. But if you will shake, then make it a rule that the party who does the shaking must be able and willing to eat, then and there, any prune you find in the box. Don't let him say it is too green. It must be ripe enough for him to not only eat it, but relish it also. Otherwise it should have been left on the tree.

The orchard should be regularly picked over every three to five days, always commencing on the same side. Pile your empty boxes every fifth tree in every fifth row. This makes it handy for both the picker and the hauler. Never let the prunes stand over night in the box if picked off the ground while hot unless they are quite firm.

DIPPING.—Use a combination grader, pricker, dipper and spreader. It saves half the labor and takes only three-fourths of the trays, and you get more pounds of dried fruit. I have used the one made by W. C. Anderson of San Jose, though others made on the same principle are doubtless as good.

Use from two to three pounds of granulated American lye in 100 gallons of water. Use just enough to dissolve the wax on the skin, not enough to cut or "cheek" it. The lye and the wax soon make a soap, or at least the water soon becomes soapy, say after two or three tons are dipped, and the solution will no longer dissolve the wax. The water should then be changed and new lye added. This is absolutely necessary in order that efficient and uniform work should be done. Besides, on the score of cleanliness, this frequent change of dipping water should be made. Never dip in water that prevents you from being willing to eat a prune as it comes on the tray. It costs no more to be nice than to be otherwise. If you are something less than nice other people may not know it, but you would, and that ought to settle it.

CHANGING WATER.—In order to make these frequent changes of water it is absolutely necessary to have the auxiliary tanks wherein the water is brought to the boiling point, or nearly so, while you are dipping with the other water. By having 3-inch connections you can make the change of water in about two

or three minutes, and in two or three minutes more the water is boiling and the lye dissolved.

The auxiliary tank only costs \$15 or \$20 more, and is heated by the same furnace and practically without extra expense. The water should be boiling and the prunes should be given a plunge only; in and out again as fast as the operator can accomplish it. Even then he will not be able to do it rapidly enough.

The water having so little lye in it, the prunes should not be rinsed. They can be eaten as they come from the tray, and I have often thus eaten them. There is not the slightest trace of the lye, and what little there is is perfectly harmless and it very much hastens the drying. There will be no "frogs," and the product will be much finer. I have been told that the chemists say that, owing to chemical changes and combinations, every trace of lye disappears by the time the prune is dry.

STACKING AND SWEATING.—When the prune is about three-fourths dry the trays should be stacked to a convenient height, but not directly one above the other. Let the end of No. 2 stick about 6 inches over the end of No. 1, then the end of No. 3 stands precisely over the end of No. 1 and the end of No. 4 precisely over the end of No. 2, and so on until you have the stack as high as is convenient. This will allow the air to circulate among them. Turn the top tray upside down, spilling its contents in the tray on which it rests.

The prunes should be allowed to finish curing in the stack. This finishing in the stack will take about a week in ordinary weather, and ties up your trays that long, but is well worth the trouble and inconvenience, as the product is much finer, the prunes having a dark, velvety skin and pliable flesh, and yet are perfectly cured and will keep thoroughly. You can tell whether the prune is cured by opening the softest. It should not look slippery on the inside and should both look and taste all right. As soon as you think it tastes as pleasantly as further drying will ever make it you can generally safely rely on its being thoroughly cured.

When cured the prunes should be piled about 2 feet deep in bins and there allowed to go through a thorough sweat, shoveling them over about once a week, raking them down out of the pile (if they have become packed, as they are liable to do) with a bent, smooth-pointed, blunt, two-pronged garden hoe, being careful not to break any of the prunes. After being thoroughly sweated, and not before, the prunes are ready for the packer.

IMPERIAL PRUNES.—What I have said refers to the ordinary French prune. In case of the Imperiale Epineuse the following changes should be made. The orchard should be picked over every day. Otherwise the prunes are liable to start fermenting, especially if the day should be hot, and once started the ferment continues until the prune is both black and bitter to the stone. During the last ten days or two weeks of the season the trays should be stacked every night and spread out each morning, otherwise the night dews will prevent you from getting the last part of the crop dried on account of the size and extreme juiciness of this prune. There will also be a number of "puffs" in this prune which must be picked out of each tray.

PACKING AND MARKETING.—As to the packing and marketing of prunes, I dropped that part of the business some years ago, but one of the largest and most successful packers has kindly given me the following description of what becomes of them after they go into the packers' hands:

"The fruit is brought to the packing houses by the grower, who has previously agreed upon the price he is willing to accept for same, and after presenting the weigher's certificate at the office he is in a position to collect in full for the season's crop. This ends the fruit grower's interest in the crop for the season. After delivery to the packing house the prunes are conveyed to the graders in order to separate the large and small into six or eight grades, usually beginning with 30s-40s and making a difference of ten prunes to the pound for each grade. They are then deposited in large bins, and if the time for shipment will allow they are left to equalize as to moisture before being taken to the packing department. In case the Eastern buyer desires to process and pack them under his own supervision they are put in sacks weighing about 100 pounds each, from the bins, plainly marked as to size, and loaded in cars of not less than 24,000 pounds. Some years back fully 75% of the crop were shipped in this manner, but on account of the better grades not carrying to destination in good condition it was found expedient to insist upon the processing and boxing in California. The wisdom of this change needs no further explanation than the great increase of shipments in wood.

"The prunes are taken to the processing vats and immersed in boiling water, to which has been added a small quantity of glycerine, and after being thoroughly drained are ready for the boxing department. The largest and best grades are packed in 25-pound boxes, lined with lithographed papers, the top layer being arranged in uniform rows calling facing, which is done by girls at a stipulated amount per box. The smaller and inferior grades are packed in boxes weighing fifty and eighty pounds net, and as the

charge for boxing is but one-half of the cost of 25-pound packages the fruit is not faced.

"The processing brings about a chemical change by dissolving the sugar, and if not exposed to the air the prunes will keep their black, glossy appearance from one to two years. The fruit is sold F. O. B. and is distributed by direct shipment to buyers in cities known as jobbing centers, which includes any city that can boast of a wholesale grocery or fruit dealer. These sales are brought about by resident brokers, who are in constant telegraphic communication during the active buying season. The crop from California for the past season is estimated at 100,000,000 pounds. The shipments for export have taken almost 25% of the entire crop.

THE IMPERIAL A SHY BEARER.—Following the reading paper, when it was ascertained that Mr. Leib was the owner of the largest orchard of Imperial prunes in the State, an interesting discussion followed. Answering the question as to their merits compared with French prunes he said:

"The Imperial prune is very fine in flavor when cured, but is exceedingly difficult to cure. The trees in our orchard have grown vigorously, but we have not been able to get one-fifth of a crop. The orchard is eight years old. When trees don't bear, they can bear less than anything you ever saw."

FLORIST AND GARDENER.

Bird of Paradise Plant.

TO THE EDITOR:—I have been thinking for some years of writing a short article for the PACIFIC RURAL PRESS about this beautiful shrub, of which the botanical name is *Poinciana Gilliesii*. Perhaps I can do no better than to copy a description of it which I took from an Eastern catalogue. "The color of the flower is a golden yellow; it measures 2½ inches across, and is produced in large trusses. The most beautiful part of the flower is the large pistils, which are spread out in fan-like form and are of bright crimson flavor. The foliage is also highly decorative, reminding one of a very delicate acacia. If the seeds are started early it will produce blooms in great profusion the first year."

I have two of these shrubs in my front yard that I raised from seed eight years ago. The largest one commenced to bloom last season, May 21, and was in continual bloom, including second crop, until September 22. It is now 6½ feet in height and the same in width; the diameter of the trunk is 2½ inches. There were 135 spikes or trusses on it last season. Three of the largest bore 78, 77 and 91 flowers respectively, second size 52, 55 and 56, and third size 33, 35 and 50. Average number of flowers on each spike 58½, or 7905 in all. I succeeded in numbering them by very carefully cutting off one at a time from the place where the flower stem came off of the spike. I am fully satisfied that I am within bounds in stating that there were at least over 7000 of these lovely flowers on this shrub.

AS A FORAGE PLANT FOR BEES.—I have often wondered if this beautiful shrub could not also be grown successfully as a forage plant for bees where the temperature is not too low. I am unable to tell how great a degree of cold it will endure, but 20° above zero here does not effect it in the least. I am, however, fully satisfied that they can be grown successfully on thousands of acres of hill land and bloom continually from May to October without irrigation, and in places where many other kinds of wild forage plants for bees would suffer for this want of moisture and consequently prove to be a failure during the hot summer months, just the time they are most needed. I noticed that bees of many kinds and other varieties of insects visited these shrubs many times almost every day that the flowers were in bloom, and hence I concluded they may in the near future prove to be very valuable not only to those who keep bees for their honey, but for fruit growers also. It is, I believe, a conceded fact by many that bees and other insects are the agents for the transportation of pollen, and that where the most bees are kept the fruit crop has almost invariably been much larger than formerly, when no bees were in close proximity to visit fruit blossoms of different kinds. I would like your opinion in this matter, as, if I am correct in my judgment, this beautiful shrub would soon prove to be a very beautiful acquisition to this State, and undoubtedly to many other parts of the United States where the temperature is not too low during the winter months. These shrubs bear seeds which are enclosed in a short, stiff pod about 2 inches long. I saved the seeds the past season and will plant them in April or May.

Calistoga, Cal.

IRA W. ADAMS.

[There is no doubt that fruiting is increased by the presence of bees. Some kinds of fruit are more in need of such help than others. If planting this shrub would keep the bees at work in the hills during fruit-drying time it would be another point in its favor.—Ed.]

Potato Growing in Southern California.

Charles Motsinger of Cucamonga gives the Los Angeles Cultivator an account of potato growing in his part of the State, which will be widely useful in California valleys.

THE CUCAMONGA REGION.—California presents many favorable conditions for the cultivation of potatoes and in some sections it forms a large proportion of the farm crop. But as a whole we of the south part of the State do not raise as many potatoes as we might, and not nearly enough to supply the demand.

For several years this industry has been one in which our colony has attained some degree of success. The potato, being one of the most important articles of our vegetable food, might well receive much more attention than it does.

Where soil and climatic conditions are so favorable the cultivation of potatoes should be quite a profitable occupation.

The growing of potatoes might be classed under two heads—those grown with irrigation and those of the moist lands without irrigation. Those of the highland are much like the mountain grown potatoes, are firm and dry in quality and usually a more desirable potato than those of the moist lands.

We raise two crops a year, but seldom on the same piece of land, as the soil is not strong enough to get the best results. The first or as is known as the spring crop is planted in February, and is grown largely for seed for the fall crop, though in the last few years the sale of the spring crop in the market has been quite an item to the grower.

The best variety we can raise for the market is the Early Rose, and for seed for the fall crop the White Burbank and a pink-eye variety now largely known as the Cucamongas, which seem peculiarly adapted to this section and yield better than any other fall variety.

SPRING CROP.—The spring crop is planted without irrigation and usually not irrigated till April or May, but in the last two dry years it has been necessary for successful growing to irrigate immediately after planting and continue until the crop is beginning to mature. These potatoes, coming on in the heat of summer, are very liable to rot quickly if great care is not taken, but this may be prevented to some extent by early digging and placing in a cool and well-shaded place, where they may be kept from six to eight weeks in very good condition.

For seed, the crop should be well matured before digging, or there may be difficulty in getting a satisfactory stand in the fall crop. A day in ripening may be worth a week in sprouting the new crop. From forty to fifty sacks to the acre is a fair yield and from 50 to 75 cents per sack a good price for seed, while the marketable varieties bring a much better price.

FALL CROP.—The fall crop is the most important and its cultivation requires much more care and attention than the spring crop. The ground should be plowed in the early spring and kept well cultivated and plowed up to the time of planting. It should be well irrigated in June, and then plowed just before irrigating for planting, as this has been found to be far better than simply cultivating after the June irrigation. From the middle of July to the middle of August may be considered the proper season for planting. In sections of lower ground early planting is more necessary, so the crop may mature before early frosts. The ground should be evenly as well as thoroughly irrigated, the check rows being made about 33 inches apart. If the furrows for planting are 7 inches deep, and allowing that they fill about 2 inches, put the seed potato down about 5 inches below the surface, and the hills should be about 16 to 18 inches apart. It is quite necessary that the ground should be harrowed and smoothed down immediately after planting, not allowing the deep furrows to stand open longer than necessary.

Extremely hot weather may burn the potato just as it is coming out of the ground. This has much the same effect as frost on the spring crop. There is little danger of this on ground that is thoroughly wet.

PUSHING THE GROWTH.—The crop must never be allowed to lag for want of attention. It is better to have a small crop and well attended than a large one and half cared for. If they get dry and are then given plenty of water, it starts a new growth of tubers and also causes the old ones to take a second or rough and knotty growth. This may also be caused by cultivating close and disturbing the hill. The grower's will and muscle must be in his work, for this is a crop that will not grow by itself.

For irrigating, the water may be let run in a single row from four to eight hours, according to the nature of the soil.

The potato scab has been a source of much annoyance to the growers. After two or three crops in succession on the same ground they would be so covered with the rough scab as to be almost worthless. But we believe a possible remedy for this trouble is to cover the seed well with sulphur after they are cut and ready to plant. It is surely a very simple

remedy and may be practised with little trouble and still be of much value.

Very little attention has been given to fertilization, but where it has been tried it has given good results. Two parts of gypsum to one of bone meal is a good commercial fertilizer, and by a combination of a crop of peas as a vegetable and gypsum as a commercial forms the best all-round potato fertilizer that has been tried. One drawback in fertilizing is the fact that the grower, using land rented from year to year, cannot be sure of the full results of his labor and expense.

Different seasons require different modes of work and this is one of the reasons why the Chinaman is not more successful as a grower. He is a good imitator, but seldom advances an idea.

MARKETING.—We of the southern part of the State must meet in competition the potatoes grown by cheaper processes in the northern part, and the successful marketing of the crop, while last, is not of least importance to the grower. A new and quite successful way to market them is to form an association or by mutual consent let one person handle the crop of the whole section. For a given commission he may do all the selling and collecting. He would be better acquainted with prices, the buyers, and quality of potatoes needed in each section, and might prevent the glutting of local markets and consequent cutting of prices. It is much better than allowing the crop to be handled by commission men, who care very little for the interest of the grower. In the year 1897 there were about 30,000 sacks raised in this colony. They sold at an average of 98 cents per hundred, which brought to the growers of Cucamonga an aggregate of about \$32,000. Owing to the dry season of 1898 only about 10,000 sacks were raised, with an average price of \$1.25 per hundred. An average yield might be considered about seventy sacks per acre.

STATE BOARD OF AGRICULTURE.

California Agriculture in 1899.

Report of the State Board of Agriculture, specially furnished for advanced publication in the PACIFIC RURAL PRESS.

OFFICE OF THE
STATE BOARD OF AGRICULTURE,
SACRAMENTO, CAL., Feb. 1, 1900.

To the Hon. Henry T. Gage, Governor of California:

SIR:—As required by law, we submit to you this the annual proceedings of our Board, and a statistical review of the agricultural and industrial condition and products of California for the year A. D. 1899. It affords us much satisfaction to be able to report to you under such satisfactory conditions, and to review the accomplishments of a year which has brought to our people nothing but happiness and wealth, and which introduces a succeeding season filled with promises. The pages to follow tell their own story of even climate, fruitful soil, abundance and variety of product and an industrial population which is realizing from the advantages with which nature has endowed us an economic development, an educational advancement and a State supremacy which is the pride of our people and the wonder of the world.

To make this report complete would be impossible, and we will not attempt it. In California the problem of existence and human happiness can be wrought out in countless forms. Industry and intelligence when applied to a fertile soil can, under a cloudless sky, achieve an infinity of accomplishment. We will concern ourselves with a review only of our most extensive products, leaving our countless wealth in other directions to be inferred from the conditions which such a review discloses.

WEATHER CONDITIONS.

The year 1899 was not favored by rainfall or temperature. The total precipitation at Los Angeles for the season 1898-9 was 5.59 inches, for San Francisco 16.87 inches and Sacramento 15.04 inches, while the normal for these points is 16.50, 23.01 and 19.41 inches, respectively. The rainfall, however, came at opportune times, and, for the quantity, could not well have been better distributed. Up to March 14th, 1899, the precipitation was very much below the normal and grave fears were entertained of a repetition of the shortage of 1898. During the month of February and the early part of March unusually low temperatures prevailed, and apricots and almonds, which bloomed during that time, suffered much damage. Peaches escaped with less injury, and citrus fruit in the southern counties was damaged much less than was feared from the low temperature, owing to the fact that such fruit was mostly ripe, in which condition it is not so susceptible to injury from cold. Grain crops and pasturage were commencing to show serious effects of the drought when, on March 14th, a generous rain began falling throughout the State, lasting until March 25th. The rain was most timely, saving nearly all crops and ensuring a harvest. April weather was favorable, with light showers from the 24th to the 30th. May was generally cool, with a mean temperature for the State of 4° below normal. June was warmer, with a temperature slightly above normal; the week ending June 12th, being abnormally warm, hastened the harvest, which was quite generally in progress before the end of the month. The month of July was about normal and favorable to the progress of the harvest. August was remarkably cool, being 5° below normal

and not favorable to the maturity of raisins or the curing of dried fruit. September temperature averaged slightly above normal, with some days of extremely warm weather in the interior of the State. October was cool, nearly 3° below normal. During this month the generous rains of the season commenced. It did considerable damage to late curing of dried fruits, beans, hay and, in localities, wheat and barley still in the field. The rain, however, was seasonable, and proper precautions would have prevented nearly all of this loss. Late Tokay and other table grapes intended for Eastern shipment could not have been saved, and heavy and continuous rain-falls during this time is one of the legitimate hazards of that industry. Mild weather and frequent heavy rains marked the months of November, December and January.

The average rainfall for forty-eight years at San Francisco and Sacramento up to January 1st of each year has been about 7.82 inches, while up to January 1st, 1900, there had fallen 9.88 inches, a considerable excess of the average and a satisfactory guarantee of a sufficient precipitation for all purposes for the year 1900. The total rainfall for 1898-9 at San Francisco and Sacramento was about 16 inches, against an average at these two points for the last forty-eight years of about 20 inches.

WHEAT.

Wheat has always been the great staple crop of California; and, notwithstanding the rapid extension of our fruit, vine, alfalfa and beet acreage, it will probably continue to lead our other crops in gross value for many years. Our wheat acreage has shown no increase since 1893, and the probabilities are that we have about reached the limit of area sown to this crop. But we should be content to rest upon our accomplished wheat record, which has been first among all the States of the Union and is now sixth and gives us prominence in comparison with the wheat-growing sections of the world. The crop of 1899, as will appear from the following table, was a large one:

ACREAGE AND YIELD SINCE 1893.

Year.	Acreage.	Bushels.	Per acre.	For U. S.
1893.....	2,875,307	31,964,559	11.1	11.4
1894.....	2,587,568	26,071,510	10.0	13.2
1895.....	2,033,938	20,779,832	10.2	13.7
1896.....	2,423,585	29,655,174	12.2	12.4
1897.....	2,665,943	30,586,310	11.4	11.4
1898.....	.....	12,404,166	.....	.....
1899.....	2,393,185	33,743,909	14.1	1.23

A comparison of the wheat yields of the world and of the United States with that of California will be of interest as showing our relative position. The following tables show that we produce about 6% of the wheat crop of the United States and about 1% of the world's crop.

WHEAT CROP, 1897.

	Bushels.
World.....	2,269,352,000
United States.....	530,149,168
California.....	32,394,020

WHEAT CROP, 1898.

	Bushels.
World.....	2,907,000,000
United States.....	710,000,000
California.....	12,404,166

WHEAT CROP, 1899. (ESTIMATED.)

	Bushels.
World.....	2,540,000,000
United States.....	547,300,000
California.....	33,743,909

The prices at which the wheat crop of 1899 sold was low, ranging from \$1 to \$1.05 per hundred-weight. Even at this figure this crop for 1899 was worth between \$20,246,000 and \$21,258,000—a splendid revenue. The dry year of 1898 cost California producers a great sum. In wheat alone the yield of upwards of 30,500,000 bushels in 1897 was reduced in 1898 to about 12,400,000, and the value of the crop, which in 1897 was worth about \$27,000,000, was cut to about \$7,000,000 in 1898.

It is difficult to understand the low prices prevailing for wheat. The world's area of profitable growth has about been reached and consumption is constantly increasing. The world's crop of 1899 falls short of that of 1898 by over 389,700,000 bushels, and the surplus over consumption is so low that under old conditions the market in many places would be abnormally high. The modern facilities for transportation, however, have set the world at rest over its daily bread. It is satisfied to know that it exists somewhere, knowing that it can be obtained from any quarter of the world when required.

Wheat continues to be grown at a profit in California, notwithstanding the decreased yields and low prices; but these conditions have created a tendency towards mixed farming which has been beneficial to the State.

BARLEY.

Barley is the cereal crop of second importance in California. It is about the only crop with which our farmers rotate on their wheat fields, and the acreage planted each year is very variable. It is our staple grain for stock feed and with us takes the place of the corn of the farmer of the Middle West. The

acreage sown or harvested is difficult to determine, but the most careful estimates place the average for the last four years at from 950,000 to 1,000,000 acres and the average crop at a little over 20,000,000 bushels, or a yield of about twenty-one bushels per acre. California barley is unexcelled for brewing purposes, and a strong demand for it has been established in England, where all of our surplus crop, suitable for brewing purposes, can be sold. The crop of 1899, estimated to be about 20,750,000 bushels, sold at about 85 cents per hundred-weight, giving it a value of about \$8,460,000.

CORN AND OATS.

The corn crop of California, while it is important and valuable, does not compare with that of the middle Western States. It is here grown chiefly in the central and interior part of the State, on irrigated lands and in the river bottoms. Land suitable for growing corn has heretofore been considered more valuable for orchards, alfalfa, hops, sugar beets and vegetables, and little disposition has been shown to increase its acreage, which for several years has averaged about 90,000 acres. The yield will run about thirty bushels to the acre, when the whole crop is considered, although many sections produce a greater return. Should the above crops continue profitable, which is most probable, the corn area in California will never be extensive.

Oats, likewise, have never attained commercial importance here, although grown considerably in some of our moist coast counties. It is not with us the standard stock feed it is in the Eastern States, and is sown much more extensively for hay than to be harvested as a grain crop. The best attainable estimates place the average acreage annually planted to oats at about 115,000, and the average annual yield at about 3,400,000 bushels. Present conditions do not warrant a prediction that this yield will be greatly increased.

FERTILIZING GRAIN LANDS.

Our grain farmers have generally practised a continuous cropping, without efforts to prevent soil exhaustion by restoring fertility or rotating crops. In some sections of the State this has resulted in reducing the productive capacity of the soil by fully one-half, while in others it has been singularly maintained. The question of preserving or renewing the vigor of our soils will soon, however, become an important one with our farmers.

Consular Agent Charles A. Murphy, at Adelaide, South Australia, has recently made a most valuable report on fertilizing wheat fields in Australia to the State Department, and advance sheets of this report have been kindly forwarded to us by Secretary Hay. The Consul noted the similarity of conditions in South Australia and California. There, continuous cropping of wheat lands, which in its virgin state produced from twenty to forty bushels per acre, so appropriated its valuable plant food that it would only produce about seven bushels per acre. It became apparent that this exhaustion was only partial, that there remained sufficient nitrogen and potash to produce good crops if only phosphoric acid was added. This was tried and produced hitherto unheard of results. After several years of demonstration, the movement spread rapidly. In 1896 about 5000 tons of fertilizers were used; in 1898, 25,000 tons were used, it being estimated that one-fourth of all lands under crop were fertilized. We will not attempt to set out the splendid results which followed the use of this fertilizer. In most cases reported, the yield was almost doubled. During the season of 1897, when, owing to drought, Australian crops were practically a failure, lands treated with seventy-five pounds superphosphate of lime yielded twelve bushels wheat per acre, when similar lands adjoining and not fertilized were not worth harvesting. The cost there is inconsiderable; at a total cost for all purposes of \$1.52 per acre, an increased yield of six bushels per acre was realized the first year. It is not practicable here to enlarge upon the character of fertilizer to be used, as that will depend upon the conditions where applied. Where the fertilizer was drilled in with the seed, much less was required and the results were very much better.

For the purpose of experimenting along the lines reported by Consul Murphy, this Board procured from the California Fertilizing Works in San Francisco one and a half tons of a fertilizer manufactured by them, and similar to that used in Australia. We have distributed this fertilizer to several careful farmers where it will be used on wheat, barley, oats and corn. The cereals grown on lands thus fertilized will be shown at the State Fair of 1900, together with samples grown on adjoining unfertilized tracts and the yield and quality compared. We hope to attract attention to this matter and to present an interesting statement of the result of our experiments in our next report. We wish to thank the public-spirited manufacturer who gave us this fertilizer and has enabled us to prosecute these experiments.

(TO BE CONTINUED.)

THE total apple shipments thus far this year from Atlantic ports to Europe have been 1,158,363 barrels, against 1,102,365 barrels for the same time last year.

Agricultural Review.

ALAMEDA.

DAIRYMEN ORGANIZE.—Alameda Argus: Dairymen have organized the "Alameda City Dairymen's Association." The object is to aid the Board of Health in their work, and to avoid the loss of hills. The officers are Minford Y. Smith, president; Frank Hardwick, secretary; W. B. Bridge, treasurer.

GOOD OUTLOOK FOR FRUIT.—Oakland Enquirer, March 2: Almonds are in full bloom at Niles and apricots are just beginning to bloom. The outlook in the fruit line is promising for a full crop. Hay and grain crops are looking well and the prospects are for a full crop. A very large acreage of the hay crop will volunteer this season.

BIG WAREHOUSE.—Balfour, Guthrie & Co. have decided to increase the size of the warehouse which they are erecting to 700 feet in length and 75 feet in width. In the center of this warehouse a grain cleaning and separating plant is being installed.

FREIGHT ON EMPTY BOXES.—Haywards Journal, March 3: The railroad company has notified its agents that no charge for returning empty boxes will be made the coming season, the shipper assuming the responsibility as heretofore.

COLUSA.

EARLY BARLEY.—Williams Farmer: While driving to Colusa our attention was directed to a field of barley, the tall heads of which were waving in the breeze. Never before have we seen barley headed out so early.

FRUIT GROWERS ORGANIZE.—Colusa Sun, Feb. 28: The fruit growers of this county have organized the Colusa Fruit Growers' Association. Geo. P. Ahlf was elected president and W. H. Gray secretary and treasurer.

FRESNO.

TREES IN BLOOM.—Sanger Herald, March 3: Almond, apricot, Kelsoy plum and some peach and pear trees are in full flower. Myriads of wild flowers are also blooming on the plains, and the air is freighted with their fragrance.

FINAL PAYMENT FOR RAISINS.—Fresno Republican, March 1: The California Raisin Growers' Association adopted the plan of making weekly payments to the growers; that is to say, that within one week of the time the raisins delivered by the growers were packed, the association issued checks to the growers in payment. The final payment has just been completed, and the sums distributed on the last payments were as follows: February 6th, \$672; 9th, \$11,273; 12th, \$3,775; 15th, \$11,695; 16th, \$29,972; 19th, \$46,885; 21st, \$72,299; 23rd, \$72,802; 24th, \$68,695; 26th, \$25,14; 27th, \$3,150; total, \$323,972. An average crop of standard raisins brought 4½ cents a pound in the sweat box. The crop this year was not of as good quality as last year's. Some growers, however, having a large proportion of first-class raisins received up to 5½ cents a pound for their crop. Even those who have second quality raisins have received more than twice as much for their product as they received two years ago.

KINGS.

LITTLE WATER IN THE SPRINGS.—Hanford Journal, Feb. 27: Cattle raisers report that in the mountain districts there is now no more water in springs than there was last fall, and that some springs are now dry that were never so before. Unless there are storms in the mountains next month, it is feared cattle grazing in the mountains will suffer next summer for water.

FRUIT MEN CO-OPERATE.—At a meeting of fruit growers the California Cured Fruit Association was endorsed, and a permanent organization was formed, with S. E. Biddle president, Fred Kimble vice-president, John Worswick secretary and A. V. Taylor treasurer.

NAPA.

FRUIT GROWERS' ORGANIZATION.—Napa Register, March 2: Fruit growers

of this county have organized the Napa Fruit Growers' Association, with A. D. Butler president, W. W. Thompson vice-president, Wm. Fisher secretary and Wm. Hunter treasurer. The constitution and by-laws, suggested by the California Cured Fruit Association, were adopted.

ORANGE.

DIRECTORS ELECTED.—Anaheim Gazette, March 1: At the annual meeting of stockholders of the Anaheim Union Water Co. A. H. Cargill, J. B. Rea, A. S. Bradford, A. Pierotti, Wm. Crowther, M. Nebelung, C. C. Chapman and A. Goodwin were elected directors.

SAN JOAQUIN.

CREAMERY BUSINESS.—Lodi Herald: Over 4000 pounds of milk are being delivered daily by forty-three patrons to Lodi creamery. The amount of milk brought in by individual patrons ranges from 15 to 500 pounds daily. Among the latter are H. Beckman, J. Bishopberger and H. C. Beckman. The average test of butter fat is over 3½%.

SAN LUIS OBISPO.

CREAMERY WILL REOPEN.—Arroyo Grande Herald: The Arroyo Grande creamery will reopen under the management of Romie Lowe. The creamery has been closed the past two seasons on account of the scarcity of feed.

SANTA CLARA.

PRUNE CONTRACTS.—San Jose Mercury, March 7: So rapidly are the signed contracts coming in to the California Cured Fruit Association that all doubt that 75% of the prunes will be secured before April 1st, the time limit fixed, has been removed. Yesterday contracts for over a thousand acres came in, principally from Hollister and the Santa Cruz district. Many of the growers of this county are calling at the headquarters with signed contracts, and in the majority of the school districts practically all of the prune acreage has been secured. No close estimate has been made, as Secretary Barstow and his assistants are kept busy in receiving and recording the contracts and doing other necessary clerical work, but not less than 65% of the prune acreage has already been secured. Only 10% more is required to complete the deal.

SHASTA.

GROWERS ORGANIZE.—Anderson Valley News, March 3: A large number of fruit growers assembled and organized the Shasta County Fruit Growers' Association. D. Z. Hawkins was elected president; W. L. Wentworth, vice-president; H. P. Dodson, secretary. Henry Abbott was chosen solicitor for the State Association.

SOLANO.

GRAIN PROSPECTS.—Dixon Tribune, March 2: Grain around Fremont looks well. The warm weather is forcing vegetation along rapidly and most fields are too far advanced for this time of year. The adobe men never had better prospects and they have a better chance of rolling up a profit this year than ever before, as most of the luxuriant fields of grain one can see on the lowlands are volunteer crops. Thus, without spending a dollar for seed or cultivation, the adobe farmer stands a chance of raising first-class crops and getting the earliest prices.

BELGIAN HARE INDUSTRY.—Suisun Republican, March 2: An industry, which promises to be a profitable one, is attracting much attention in this State. It is the raising of Belgian hares, and already a rabbitry has been started by Geo. P. Plaisted. Mr. Plaisted says they are more profitable than chickens and there is less trouble in caring for them. He suggests that farmers can raise enough for food, the meat being white, tender and juicy.

FRUIT PROSPECTS.—Vacaville Reporter, March 3: Every promise is for the best crop of fruit and the biggest crop of cereals that this section has ever witnessed. In the early part of the winter it was feared that the acreage in wheat would prevent seeding a large portion of winter-sown wheat. The freedom from rain in February has allowed the rancher to seed a full acreage. Apricot trees are blooming very full, and this is equally true of such almonds, cherries and peaches as have been in blossom.

STANISLAUS.

WATER IN THE TURLOCK CANAL.—Modesto Herald: Carried thirty-five miles through ditches, tunnels and flumes, the canal ranging from 15 to 60 feet in width, the water of the Tuolumne river has traversed Turlock irrigation district. It is said that within sixty days the entire system will be practically completed, covering 176,000 acres of land with 115 miles of canal, independent of the main canal, and a stream 60 feet wide and 6 feet in depth will eventually be carried. Half that volume may now be carried.

SUTTER.

BELGIAN HARES.—Yuba City Farmer, Feb. 23: Several residents of Sutter City are enthusiastic over the Belgian hare industry and have started pens. Several stock hares have been received, one of which, we understand, cost \$30 and scores 91½ points. C. W. Ward and John H. Wilde are among those who have embarked in the new industry.

PROFITABLE POULTRY.—In a letter to the Yuba City Independent, G. T. Jones writes as follows: "I want to tell your readers what my friends, the Storm Bros. of Nicolaus, have received for the product of about 300 hens for the year ending with Dec. 31, 1899. This is only a side affair in connection with their extensive stock raising and farming business. Eggs sold during 1899—January, 155 dozen at 31c, \$48.05; February, 416 at 16c, \$66.56; March, 731 at 13c, \$95.03; April, 507 at 15c, \$76.05; May, 440 at 17c, \$74.80; June, 485 at 17c, \$82.45; July, 286 at 18c, \$51.48; August, 210 at 20c, \$42; September, 276 at 24c, \$66.24; October, 290 at 28c, \$81.20; November, 216 at 31c, \$66.96; December, 292 at 31c, \$93.44. Total, \$844.26. Sold during the year 30 dozen broilers, \$90, and 20 dozen hens, \$105. Grand total, \$1039.26. As there was no account kept of the number of eggs and chickens eaten by the family, and as they raise all of their own feed, no estimate is made of the cost. Who can beat this record? John Ricketts has charge of the poultry department and he keeps a strict account of all the product he sells."

TULARE.

COST OF PUMPING WATER.—Tulare Register: H. K. Ayer, manager of the Westwood orchard and vineyard, has started up engine and pump for irrigating. By actual measurement, Mr. Ayer informs us, each inch of depth of water in the reservoir represents 25,000 gallons, and he was able to put 560,000 gallons in the reservoir in twelve hours. To do this the wood costs \$5.88 at the rate of \$5 per cord for 4-foot oak wood, and the oil and engineer cost \$2.52, making the total cost \$8.40 for a twelve-hours' run of the plant pumping into the reservoir. This is at the rate of 1½ cents 1000 gallons. This is a total cost for water, not including interest on money invested or wear and tear of plant, of 40 cents for each inch in depth of water put on an acre of land, or \$2.40 per acre for a 6-inch wetting, as near as may be, not allowing for loss by seepage in the ditches, but making all due allowance for seepage from the reservoir, as the depth of water in the reservoir was actual, and whatever may have seeped out of it was in addition to the quantity above stated.

WATER WILL INCREASE.—Tulare Register, March 2: An old mountaineer says there will be more water in the ditches than the quantity of snow on the mountains would seem to indicate, as the snow came early and has already saturated the ground well, so that when the melting season comes the water will go into the streams and not into the soil on the mountain sides and ridges, which have heretofore been very thirsty.

FRUIT TREES BLOOMING.—In a communication to the Visalia Times Major Berry writes that last year Prunus simoni bloomed ahead of peaches. This year it is the reverse. Last year at this time French prunes did not show the white of their blossoms; this year the hlooms show plainly. Peach trees are now blossoming freely, but on some varieties there are not as many flowers as there were last year. The late varieties of pears—Florello, P. Barry and Winter Nellis—are beginning to bloom. Bartletts are pushing along fast. Last year during the last four days in February and the first three days in March the nights were frosty. Ice formed twice, but did no injury to fruit buds. Our Visalia district promises at present a large fruit crop.

YOLO.

INCREASING ITS CAPACITY.—Winters Express: At a meeting of the directors of the Winters Dried Fruit Co. Robert Morrison was elected president and F. W. Wilson secretary and treasurer. The company has found its warehouse too small and an extension will be erected, 35x36 feet and two stories high, with full basement beneath. This will give 3720 feet more floor space, double the storage and packing room, and furnish ample room for the box making department. Last year 1,307,967 pounds of dried fruit was packed by this company, as follows: Peaches, 830,804 pounds; prunes, 193,827 pounds; apricots, 66,289 pounds; raisins, 34,585 pounds; pears, 4273 pounds; figs, 112,961 pounds.

YUBA.

CONDITION OF GRAIN.—Wheatland Four Corners, March 3: Spoking of the condition of growing grain, W. A. Greps of Erie says farmers have nearly completed all the sowing they can do this year. He believes the acreage harvested will be about two-thirds of last year's

crop, and estimates the summer-fallow at one-fourth an acreage and the winter-sown at one-half. All grain sowed seems to be in first-class condition.

NEW SHIPPING FIRM.—Marysville Appeal, March 5: W. J. McDonald, for several years traveling freight agent for the St. Paul & Milwaukee Railway, has entered into a partnership with R. C. Kells of Marysville. They will carry on the business of shippers of California fruits. The new firm will be known as McDonald & Co., with headquarters at Marysville and Los Angeles.

ARIZONA.

SHEEP SHIPMENT.—The Phoenix correspondent of the Los Angeles Herald states that it is believed that there will not be a wholesale exodus of sheep from the Salt River valley to California because of the special rate of \$75 per car offered by the railways. The sheep men assert that they will find some way of returning their flocks to northern Arizona, where there is plenty of grass. There is no drought in Arizona, as seems to be the impression outside. There has been no rain in the Salt River valley this year and no grass on the deserts.

OREGON.

PROFITABLE JERSEYS.—Saint Helen Mist: Harry West of Scappoose milked an average of eight Jersey cows during 1899, with the following result, as is shown by the books of the Marydale creamery: Average pounds of milk per each cow, 6775; average test of milk, 5.4 pounds of butter fat, or 367 pounds per cow for the year, which, by the rule of adding one-sixth, would be 428 pounds of butter. Each one of Mr. West's cows earned \$79.68.

SHEARING GOATS SEMI-ANNUALLY.—Wool Markets and Sheep: George A. Houck relates his experience with goats as follows: As an experiment, I sheared last fall 500 head of mixed goats, about 350 being one and two-year-old wethers. I also sheared several billies and a few nannies. I am pleased with the result thus far. The goats that have been sheared seem to be doing better than the ones which were not sheared and are on the same range. The mohair from the 500 weighed 1300 pounds. My best billy, that sheared eleven pounds—year's fleece—last March, gave a fleece of eight pounds this fall, about Oct. 1st. One nanny, whose fleece last spring weighed eight pounds, sheared six pounds last fall. I intend keeping tab on one lot of 150 head and comparing the result with those from a similar lot which I did not shear in the fall. I have shipped the fall clip, which was then 5 to 9 inches long. It is my opinion that by shearing early in the fall—say, about Sept. 10th—the goat will winter better and shear from one to two more pounds of wool yearly than by shearing only once a year, also will not begin shedding so soon in the spring and will not, therefore, have to be sheared so early. It will greatly lessen the risk of loss from cold rains if the time of shearing can be postponed until the middle of April, instead the middle of March.

WASHINGTON.

FRUIT GROWERS ORGANIZE.—Seattle Post-Intelligencer: The fruit growers of Clarke county met and effected an organization which is expected to develop into an exchange for the purpose of grading and packing the entire dried prune product of the county. A warehouse will be secured in this city and all prunes that leave the county will go out properly graded and packed. The exchange will also establish a minimum price for prunes. A committee of twenty was appointed to meet with the Oregon growers at Portland on March 17th.

ASSESSORS FIX LIVE STOCK SCHEDULE.—At the convention of county assessors held at Ellensburg a live stock schedule was adopted as follows: Weaned calves eight to eleven months old, \$5; two years old and under, \$10; cows (range stock), \$20; all other cattle, two years old and over, \$15 to \$40. Horses—Cayuse yearlings, \$2 to \$10; American stock, two years old, \$10 to \$25; American stock, three years and over, unbroken, \$25 to \$50; work horses, \$25 to \$100; stallions, according to grade; mules same as horses. Sheep, \$1.75 to \$3, according to grade.

Beware of Ointments for Catarrh That Contain Mercury.

As mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is tenfold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free. Sold by druggists, price 75c. per bottle. Hall's Family Pills are the best.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland, O.



THE HOME CIRCLE.

The Padre's Secret.

A work of love in the long ago,
When the Mission Fathers came;
With its towers above, and nave below—
San Carlos of sacred fame.

They set their feet on the wave-worn
strand,
With words of peace and good will;
And saw before them a goodly land,
Of valley and wooded hill.

There were pink and purple peaks out-
lined
Against the blue of the sky;
All months were May, and over the wind
On its velvet wings went by.

With swinging censor and solemn chant,
And with bells in sweet accord,
On the consecrated hill they plant
The cross of our Sovereign Lord.

San Carlos was finished there, they say,
In seventeen eighty-one;
High mass was said at the shrine that
day,
And the work of love was done.

The sunset burned on the Lobos Roek,
And the ebb tide made its moan;
When the Padre Serra left his flock
And walked by the sea alone.

There came to him then along the strand
A ward of his dusky fold,
And shyly dropped in his open hand
A nugget of virgin gold.

With a startled look the Padre said:
"Why bring you this thing to me?"
And crossing himself, as if in dread,
He cast it into the sea.

"It bodes us evil, and on your life,
Let none of the faithful know;
Tell never the Commandante's wife,
And never the tall Pedro.

"It is a snare of the Evil One,
With its glamor foul and fell,
To entrap the souls of men, my son,
And to drag them down to hell."

His warning words were of small avail,
In the quest that was to be—
With eager feet on the landward trail,
And full blown sails on the sea.

The priest and neophyte, all are gone,
As the years have passed away;
And the dim uncertain light of dawn
Gives place to the full-orbed day.

Where the Padre knelt a vesper glow
On the silent chancel falls;
And there in his crypt he sleeps below
The rift in the ruined walls.

—Lucius Harwood Foote.

"A Little Comedy."

It was a gala night at the little up-
town theater and all Harvard had
turned out en masse, in honor of the
great occasion, the annual benefit of
Nella Ward, the reigning idol of the
town, the daintiest, laughing blonde
that ever graced the boards, the sauc-
iest soubrette that ever sparkled and
shone in farce, comedy, extravaganza
or light opera, inspired sonnets in the
budding poet, and bewitched man and
woman alike with her dewy, winsome
youth. The house went mad, the boxes
rained flowers, enthusiasm was at its
height; but during a temporary lull in
the performance Robert Winthrop
found his way behind the scenes, ac-
cording to his wont, and secured a
fleeting tete-a-tete with the heroine of
the hour, in a moment of freedom. The
girl was flushed and radiant, her rare
blonde loveliness heightened by a rav-
ishing toilette and the unwonted excite-
ment of the occasion; yet there was a
moody flash in his eyes as he regarded
her, and his words were more curt
than complimentary.

"Nell, was the promise you made me
one day a myth or an honest pledge for
the future? On such a night as this I
doubt and wonder was I dreaming?"

"Robert Winthrop"—and for an in-
stant the laughing blue eyes lightened
with anger—"do you begrudge me my
little hour of triumph? I have earned
it, and what is more fleeting than fame
such as this? Or is it a simple attack
of jealousy, that does small credit to
your good sense and knowledge of a
professional career? Come, speak
out; I know your mood and your looks."

"Nell, listen to me; I am in earnest.
Matters are coming to a climax at

home, and it is only a question of time
when I break loose from the family
authority, once and forever. Though I
forfeit a fortune, I will be my own mas-
ter, and for your sake what sacrifice
would I not make? But, first of all, I
must know your mind."

"You may know it and welcome,"
and she turned on him in a spirited
fashion. "Once for all, do not come to
open rupture with your people on my
account; it would be useless folly. I
know well their straight-laced notions
and ancestral pride, and estimate them
at their correct valuation; but even a
little actress has certain feelings of her
own, and I will enter no home unwel-
comed. Far rather would I reign
queen of Bohemia forever."

"And your promise?" bitterly.
"Ah! Nell—I might have known the
end of it all—dreams and delusions."

"I did not promise to marry you un-
der the rose; and on no account will I
embroil you with your family and set
you at odds with all the world."

"You have led me on from day to
day, with fair smiles and fairer prom-
ises, till nothing was left but to burn
my ships behind me."

"Rob, Rob! Are you seeking a
quarrel with me to-night—to-night,
when I am so happy? Listen to a few
words of sense, from one who wishes
you well. Wait, wait—and time will
untangle the coil, it may be. Summer
is coming; go on a yachting trip with
some friends, and forget it all."

"Forget? You have never known
love, if you could suggest such a thing."

"No?" And a strange smile flitted
across her face; then at a burst of
thrilling music from the orchestra she
ran for the stage, with a backward
glance, and laughing "good night," and
a moment later he heard the storm of
applause that greeted her entrance.

But his box remained vacant the rest
of the evening. He had no heart for
the careless gaiety of the hour, and
strode away from the brilliant scene in
a most unenviable frame of mind.

* * * * *

It was the loveliest hour of the
twenty-four, the meeting of sunset and
moonrise. Mrs. Winthrop sat on the
airy balcony of her summer villa, a
stately figure in silken attire, and
watched the chain of lights kindling
along the darkened coast, the fitful fa-
scination of the revolving beacon from
the lighthouse, the ghostly sails as they
slipped by the headlands, one by one,
and then turned with a sigh to her
companion, a girl like a rose in June,
swinging in the hammock beside her."

"Dear madam, what troubles you?"

"Lucie, I was thinking of Robert,
my son. Two months he has been sail-
ing about in his yacht, with never a
word or sign; we parted in anger, but
I will not permit the boy to wreck his
life while any show of authority is left
me."

"Strange child, how I have given
my confidence since first you came to
me this summer; but my heart was
full, and you are sympathetic beyond
any one I have ever known. Lucie,
will he ever outlive this mad infatua-
tion, regain his reason and better self?
I know well that opposition is a peril-
ous element in a love affair, and but
precipitates the evil we dread, doubly
dangerous with a man of his headstrong
temperament; but I could not counte-
nance a mistake of that sort. An
actress! Conceive of it, my dear."

"Have you ever seen the girl?" fal-
teringly.

"Never, child; heaven forbid. Robert,
I regret to say, has strange Bohe-
mian tastes, and they have led him into
dangerous ways. No doubt she is a
siren, as they all are, but a girl who
nightly exhibits her charms to the mul-
titude, exposed from earliest youth to
every temptation, the sport of scandal
—do not speak of her."

"Dear madam, you should not con-
demn the poor girl unheard. She plays,
no doubt, for a livelihood. We cannot
all be born to the purple of idleness."

"Lucie, you mistake; it is not that.
Were she poor and lowly as you, my
child, a mere companion, I should not
feel the same, but an actress—"

"An actress may have a heart,"
pleaded the girl in her soft voice.

"Lucie," with emphasis, "I trust
not. There lies my hope. I believe
that she is playing with him; but when
she realizes that it means poverty she
will throw him over without a pang.
Better a few months of heartbreak for
the poor boy than the mistake of a life-
time."

They lapsed into silence, and only the
low, lulling murmur of the tide on the
rocks below broke the stillness of the
summer night. Then footsteps came up
the winding stairway that led from the
shore, and a moment later a man's fig-
ure entered the balcony. Mrs. Win-
throp sprang up, crying "My son!"
Robert Winthrop looked like a sailor in
his yachting blue, with the tang of the
sea about him, and a certain breeziness
and resolution born of his wandering
life that summer. The moody restles-
sness of the past year seemed to have
slipped from him, and his mother's
heart beat high with hope when he an-
nounced his intention of staying at the
villa the remainder of the season.

Lucie passed into the house, leaving
the mother and son alone on the starlit
balcony. But, later on, when Mrs. Win-
throp had retired for the night, she
stepped out for a moment in search of
a missing shawl, caught the glow of a
cigar in the dusk, hesitated, and then
yielded to the situation.

"Nell, what comedy is this you are
playing, here in my home? What does
it all mean—speak?"

"Hush, Robert," beseechingly. "You
will betray all."

"I will, indeed. Where have you
been hiding all summer? I sought for
you vainly, and then boarded my yacht
as a last resort."

"Robert, I have been here for the
last two months; your mother's com-
panion."

"A companion—you! It shall not
last another day."

"Rob, Rob! Promise me that you
will keep silence for a time. I had a
motive in coming; you will ruin all by
your folly."

"Nell, I will make no promises; but
act right as seems right and fitting the
occasion."

True to his word, he lingered on
throughout the season, coming and go-
ing at intervals in his yacht, and bring-
ing a breeze from the outer world into
the quiet routine of their daily exist-
ence. Mrs. Winthrop accepts the situ-
ation with inward joy and outward calm
and breathes no word to rouse the
ghosts of the bitter past.

With rare diplomacy, she leaves the
young couple to themselves, from day
to day; sends them away on sailing ex-
peditions; grows strangely drowsy in
the evening, as a pretext for early re-
tirement; and trusts to time, and
propinquity, and the moving charm of
summer, to do the rest. Never before
had she been guilty of matrimonial
scheming, but her fears and forebod-
ings had wrought a revolution in that
proud nature; could the sweetness and
charm of the gentle Lucie but steal her
son's heart from its past allegiance, she
would gladly overlook all disparities of
birth or fortune.

And the two young people—how does
it fare with them? One would say that,
given such conditions, happiness would

come at the first call; not so many
months ago Robert Winthrop would
have sold his birthright gladly for one
such day in the fascinating presence of
the actress. And yet, such is the con-
trariness of poor human nature, that
Robert can never reconcile himself to
the little comedy she is playing.

And poor Nell has a thorn in her rose.
Her conscience awakened under the
kind and almost motherly treatment of
Mrs. Winthrop, who has developed a
strong attachment for the young girl.

The Best Food for Infants

Nature planned that infants
should have only milk for at
least the first year of life. But
thin milk, skimmed milk, will
not nourish. It's the milk that
is rich in cream, or fat, that
does the work. This is be-
cause fat is positively neces-
sary for the growing body.

Scott's Emulsion

contains the best fat, in the
form of Cod-Liver Oil, for all
delicate children.

They thrive greatly under its use.
Soon they weigh more, eat more,
play better and look better. It's just
the right addition to their regular
food. The hypophosphites of lime
and soda in it are necessary to the
growth and formation of bone and
teeth.

At all druggists; 50c. and \$1.00.
SCOTT & BOWNE, Chemists, New York.

DON'T STAMMER!

TESTIMONIAL.

Santa Clara, Cal., Feb. 8, 1900.
On March 31, 1899, I sent my son, who was then
a very bad stammerer, to Prof. J. Whitehorn for in-
struction. The professor was most successful in
correcting his speech, and to-day he speaks and
reads naturally and fluently and without any stam-
mering whatever. The professor's name will never
be forgotten.
GEORGE ROTH.

PROF. J. WHITEHORN, A. M., Ph.D.

CAN BE FOUND IN PERSON OR BY
LETTER AT

1315 Linden St., near 16th St.,
OAKLAND, CAL.



"WATCHING THE CAP,"

Is a lost art. Page Gates did it. Send for description.
PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

WATCH AND CHAIN FOR ONE DAY'S WORK.

Boys and Girls can get a Nickel-Plated
Watch, also a Chain and Charm for selling
1¢ doz. Packages of Blaine at 10 cents each.
Send your full address by return mail and
we will forward the Blaine, post-paid, and
large Free Will List. No money refund.
BLUINE CO. Box 500, Concord Junction, Mass.

WHY THE BEST?

BECAUSE they are made on correct principles,
therefore give the best results. The Menzel Hard-
ware Co. of Santa Clara, Cal., state that "they have
put up a large number of pumps of all kinds this
season, but yours give us and our customers the
best satisfaction."

I. L. BURTON MACHINE WORKS, 115-117 First St.,
San Francisco, Cal., will give full particulars and
furnish estimates of pumps run with gasoline or
steam engines. Horse powers or windmills—com-
plete plants. Closing out stock of second-hand
gasoline engines, 1 to 20 H. P.

Saw Your Wood
with Smalley or Battle Creek
Wood Saws. More money can be
made with our sawing outfits than
with any other implement you can
buy. SELF FEED DRAG Saws—5 SIZES.
Circular or cut-off, 10 sizes, also Bolt-
ing or Picket Mills. Every machine
sold under a positive guarantee to do
perfect work. Also full line of Pow-
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She feels all unworthy the confidence reposed in her, like an imposter in an honorable household; and each day renders confession the more difficult, till at last she becomes so frightened by the situation that she would fain take refuge in ignominious flight. Then, again, the careless nature of the light-hearted actress asserts itself, and she throws fear to the winds and charms Robert to a happier mood.

And so the summer days slip by, and Mrs. Winthrop sits calm and stately on the sea-looking balcony; happy in her delusion. Robert frets and chafes at the silence imposed on him; while Nell becomes more entangled in a web of her own weaving. One evening she sits at the piano singing, while mother and son listen and watch the moon climb upward from the gray sea.

The girl has a rarely musical mezzo-soprano, with a certain sympathetic thrill in it that goes straight to the heart; as she wanders absently on through the favorites of her repertoire, Mrs. Winthrop is moved and glances at her son, but he smokes on in silence.

Then the singer drops into another strain and thrills with the passionate melodies of the opera; and Robert starts from his lounging attitude and dreamy mood and listens with eager intentness to songs that have charmed him over the footlights in times gone by.

"Heavenly!" she murmurs; "what a rare gift of song! Robert, my son, could this be your choice, it would make my heart glad; you might search the world over and fail to find a lovelier nature."

"Mother," and he caught her hand in an eager clasp; "you really mean it—you consent?"

At that moment Nell, all unconscious of what was transpiring, stepped out on the balcony.

"Come here," he cried, with a joyous ring in his voice, "mother has given the consent I dared not ask."

"Ah, Robert, you have learned to love her, then?"

"Yes, mother, I have loved her long and deeply."

But, as she leaned forward in all innocence to kiss the speechless girl, Nell recoiled in horror from her embrace. "No, no—not yet. First hear my confession, and then condemn me, if you will."

"Your confession?" in bewilderment.

In vain Robert laid a protesting hand on her arm, implored her with his glance; she was not to be silenced; another girl than the modest Lucie now stood between mother and son, aflame with her resolution; "I will speak, I will; I can keep silence no longer. Dear madam, hear me; I am not the companion whom you have known and loved all summer. I am an imposter."

"Hush, my child," in a strange, startled tone. "To me you have been a faithful friend."

"Listen to me, dear madam. I am Nella Ward—the actress."

"No, no—I will not believe it."

"I acted upon impulse when I first came to you. I said I will win the mother of the man I love. She will not come to me, but I will go to her. I will show her that an actress is but a woman; that the heart of an artist can beat as true as that of any lady in the land; then some day, when she has learned to love me for my own sake, I will make my confession. I—I can say no more." Her voice broke, and she sank down by her lover's side, hiding her face in her hands.

Silence followed this broken speech, and when Mrs. Winthrop spoke again it was in slow and measured terms and boded no good for the future.

"It is true—you are an actress; you have laid siege to a mother's heart. Ah, child, how I have loved you, what hopes I have cherished this summer; and then, yielding to impulse, she put her arms about the kneeling figure and burst into tears.

"I do believe in you, child," she sobbed, "and I forgive the deception that has taught me a much needed lesson."

And the lovers clasped hands in the darkness, with hearts to full for speech. —Julia M. Knight.

The Years.

Athwart the silence of our dreams,
Their memories fall like fitful gleams
From some dim flickering star
That hangs afar.
And then the present's glare and fret,
Shut swiftly in between, but yet
Hid in its transient skies,
The tireless eyes
Of endless years look, nor forget.
—Alice Katherine Fallows.

To Clean Ribbons.

NOW that ribbons are so extensively worn, it is worth while to know how to clean them successfully and easily.

The first method is exceedingly simple, and answers the purpose for all except white ribbons or those that are very badly mused. Fill a glass fruit jar about half full of gasoline—more or less, according to the amount of ribbon to be cleaned. Place the soiled ribbon in it—all colors, lengths and kinds may go in at once—and screw the cover on tightly. Shake the bottle occasionally and leave it closed from two to six hours, or over night. Then take out the ribbons, shake each one well and hang it to dry in the open air. The ribbons will be clean and the dirt will be found in the bottom of the jar. Of course, the ribbons need a thorough airing and sun bath to remove the odor of the gasoline, but that is all. No pressing is required, as the gasoline does not affect them as water would.

The clear gasoline should be poured off without disturbing that at the bottom; then the dirt which has settled at the bottom should be emptied out, and the clear gasoline put back, ready for another time. Keep it tightly covered, and, of course, never use it near a fire, because of the danger of its igniting.

The gasoline will turn white ribbons yellow, so this method is not advisable for them. It also leaves the ribbons in the same condition that it found them as regards their being mused or crumpled; so those that are badly creased should be given the treatment that is accorded the white ribbons.

Prepare a suds of soft water and any pure soap, wash the ribbon in it just as you would wash a fine handkerchief, rinse and let it partially dry. Take it down while still damp in all parts and roll it smoothly over a wide card or piece of pasteboard, rolling a piece of clean white muslin with it. Wrap the muslin around last, so that the ribbon shall be covered, and place the whole under a heavy weight. A letter press is an excellent place in which to press it. Leave it until it shall have had time to dry. The muslin will absorb the moisture.

The ribbon will come out looking fresh and clean and will have lost none of its "life," as is the ease with ribbons which are pressed with an iron.

If a good soap is used the colors will not run, and this process takes out the creases as well as removes the dirt.

Washing Windows in Winter.

There is a right and wrong way to wash windows. In winter it is often difficult to wash windows as often as they require it, as the work cannot be done in freezing weather when the sun is shining upon them. At such times dust them well, if there is dust upon them, and leave them until a warm day and an hour when the sun is not shining on them. Use a large painter's brush to brush the dust off the ledges of the window, and wipe it off the windows with a dry linen cloth. Do not use soap in washing windows, but rub them over on the inside with a little whiting moistened with alcohol and water in about equal parts. Polish off the whiting, using a chamois skin or an old newspaper that has been softened by the hands to do so. Take care not to allow the powder to scatter around the room, as it will if it is not gathered up in paper or chamois skin while it is being rubbed off. Regular glaziers always polish window glass with whiting. Do not use strong ammonia in washing windows or it will leave a mist on the glass which will be difficult to take off.

Ten Uses for Lemons.

Lemon juice removes stains from the hands.

A dash of lemon in plain water is an excellent tooth wash. It not only removes tartar, but sweetens the breath.

Two or three slices of lemon in a cup of strong tea will cure a nervous headache.

Lemon juice (outward application) will allay the irritation caused by the bites of gnats or flies.

A teaspoonful of the juice in a small cup of black coffee will relieve a bilious headache.

Lemon peel (and also orange) should be saved and dried. They are a capital substitute for kindling wood. A handful will revive a dying fire.

The juice of a lemon, taken in hot water on awakening in the morning, is an excellent liver corrective, and for stout women is better than any anti-fat medicine ever invented.

Glycerine and lemon juice, half and half, on a bit of absorbent cotton, is the best thing in the world wherewith to moisten the lips and tongue of a fever-parched patient.

The finest of manicure acids is made by putting a teaspoonful of lemon juice in a cupful of warm water. This removes most stains from the fingers and nails, and loosens the cuticle more satisfactorily than can be done by the use of a sharp instrument.

Lemon juice and salt will remove rust stains from linen without injury to the fabric. Wet the stains with the mixture and put the article in the sun. Two or three applications may be necessary if the stain is of long standing, but the remedy never fails.

A Corn Kitchen.

Henry Weiss, chef of the Auditorium, who will be chef of the Corn Kitchen at the Paris Exposition, gave a practical illustration in Chicago recently of the style in which the products of the Corn Kitchen will be served free to the patrons of the maize missionary institution during the exposition. The event was a corn dinner served to President Clark E. Carr and Secretary B. W. Snow of the American maize propaganda, both of whom have been named by Commissioner General Peck to supervise the opening of the kitchen and to D. W. Wilson, secretary of the Illinois branch of the propaganda.

It was a course corn dinner, and while corn was not the sole viand, it constituted a part at least of every dish in the menu.

There are some corn dishes which few white men have succeeded yet in making thoroughly well—corn bread and hoe cake—and, to illustrate the edible possibilities in these dishes, an old Vir-

ginia "mammy" and a New Orleans negress, wonderfully skilled in these dishes, will be part of the kitchen staff. They will be dressed in the plantation style.

It is expected to open the kitchen on April 15, and all during the Exposition it will serve samples free to those who call. After the opening the kitchen will be in charge of Director of Agriculture Charles B. Dodge.

Only Time Lawton Was Frightened.


Many good stories about General Lawton have come to the surface since his death. Major Putman Bradless Strong, who was on the staff of General MacArthur in the Philippines, says Lawton confessed to being afraid once in his life. That was when he was riding with his twelve-year-old son Manley past Paco cemetery, at Manila. It seems that a Montana detail had just buried a comrade when a California burying detail came up. Somehow they failed to get cartridges and asked the Montanas for some. The latter had nothing but ball cartridges.

"Oh, they'll do," said the California sergeant.

The bullets went whizzing over the grave and over the stone wall, on the other side of which was riding General Lawton, his head only a few inches below the wall. The bullets made a breeze as they went past. That was the only time I can remember being scared," said the general later, "but my boy spoke up and said: 'Papa, is this like being under real fire? If it is, I like it.'"—Army and Navy Journal.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, March 7, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	66 1/2 @ 65 1/2	— @ —
Thursday.....	64 1/2 @ 65 1/2	— @ —
Friday.....	64 1/2 @ 65 1/2	— @ —
Saturday.....	65 1/2 @ 66	— @ —
Monday.....	66 @ 65 1/2	65 1/2 @ —
Tuesday.....	65 1/2 @ 66 1/2	— @ —

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday.....	5s 8 1/2 d	5s 8 1/2 d
Thursday.....	5s 8 1/2 d	5s 8 1/2 d
Friday.....	5s 8 1/2 d	5s 8 1/2 d
Saturday.....	5s 8 1/2 d	5s 8 1/2 d
Monday.....	5s 8 1/2 d	5s 8 1/2 d
Tuesday.....	5s 8 1/2 d	5s 8 1/2 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	97 1/2 @ 97 1/2	1 04 1/2 @ 1 04
Friday.....	96 1/2 @ 97 1/2	1 03 1/2 @ 1 04 1/2
Saturday.....	97 1/2 @ 97 1/2	1 04 1/2 @ 1 04 1/2
Monday.....	96 1/2 @ 97 1/2	1 03 1/2 @ 1 04
Tuesday.....	96 1/2 @ —	1 04 @ 1 03 1/2
Wednesday.....	97 @ 96 1/2	1 03 1/2 @ 1 03 1/2

WHEAT.

The local market for spot offerings has not changed materially, as regards quotable values, since last review. Foreign and Eastern markets showed slight improvement at close of last week, but the effect here was counteracted by beneficial rains. During the past few days the markets abroad have presented in the main an easy tone. The world's shipments for the week were liberal, aggregating about 8,000,000 bushels. The amount of wheat and flour afloat for Europe was given at 28,400,000 bushels, being an increase over preceding week of 2,560,000 bushels. The visible supply in the United States east of the Rockies was reported to be 53,444,000 bushels, as against 29,920,000 bushels a year ago. At the close the local market was slow and against sellers, but there was not much pressure to realize. Eastern and foreign markets lacked strength.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 97 1/2 @ 96 1/2 c.	
December, 1900, delivery, \$1.04 1/2 @ 1.03 1/2.	
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at 97 @ 96 1/2 c; December, 1900, \$1.03 1/2 @ 1.03 1/2.	
California Milling.....	97 1/2 @ 1 02 1/2
Cal. No. 1 shipping, alongside.....	96 1/2 @ 98 1/2
Oregon Valley.....	95 @ 1 01
Walla Walla Blue Stem.....	95 @ 1 02 1/2
Walla Walla Club.....	85 @ 1 00
Off qualities wheat.....	82 1/2 @ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	6s 8d @ 6s 3/4 d	— @ — d — s — d
Freight rates.....	— @ 22 1/2 s	40 @ 41 1/2 s
Local market.....	\$1 12 1/2 @ 1 15	90 1/2 @ 98 1/2 c

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on Feb. 1st and Mar. 1st:

Tons—	Feb. 1st.	Mar. 1st.
Wheat.....	204,413	*177,110
Barley.....	62,053	†49,653
Oats.....	6,717	5,686
Corn.....	447	185

*Including 115,236 tons at Port Costa, 60,212 tons at Stockton.

†Including 17,763 tons at Port Costa, 20,475 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 27,303 tons for the month of February. A year ago there were 90,591 tons wheat in Call Board warehouses.

FLOUR.

Stocks are of fairly liberal volume, and would permit of a considerably larger trade than is being experienced. Quotable values remain unchanged, but in the effecting of wholesale transfers there is more or less cutting of rates.

Superfine, lower grades.....	\$2 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

The market has not shown much activ-

ity the current week, buyers being slow to operate at full figures quoted, while sellers were not in the majority of instances inclined to grant the asked for concessions. While crop prospects in northern and central California have been greatly improved by the recent rains, the grain yield in southern California will likely prove rather late, the rain in many places being too light to do very much good. A large area of the southern part of the State is ordinarily seeded to barley. Stocks in Call Board warehouses are given at 49,653 tons, and show a decrease of 12,400 tons for the past month.

Feed, No. 1 to choice.....	75 @ 77 1/2
Feed, fair to good.....	65 @ 72 1/2
Brewing, No. 1 to choice.....	87 1/2 @ 97 1/2
Chevalier, No. 1 to choice.....	1 00 @ 1 07 1/2
Chevalier, No. 2.....	— @ —

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 feed barley, per cental, for the week ranged as follows for the options named:

Seller, 1900, new, — @ —.	
May, 1900, delivery, 74 @ 75 1/2 c.	
December, 1900, delivery, 76 @ — c.	
Wednesday, at regular noon session of the Call Board, nothing was done in barley options.	

OATS.

The demand has been better than for some weeks preceding, but prices continued on much the same plane as previously noted. The proportion of offerings of choice to select qualities was not large, and for such stock the market was firm at the rates quoted, while on ordinary grades values could not be said to be well sustained.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 15 @ 1 22 1/2
White, poor to fair.....	1 07 1/2 @ 1 12 1/2
Gray, common to choice.....	1 10 @ 1 20
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 31
Black Russian.....	90 @ 1 02 1/2
Red.....	95 @ 1 20

CORN.

Market shows firmness, but there are no radical changes to record in values. Stocks of Eastern were materially increased this week, representing prior arrival purchases at a slight advance on the rates which had been ruling. Receipts and offerings of domestic product are quite light.

Large White, good to choice.....	1 05 @ 1 10
Large Yellow.....	1 05 @ 1 10
Small Yellow.....	1 50 @ 1 60
Eastern Mixed.....	1 03 @ 1 05

RYE.

Values show no quotable change. Trade in this cereal is of a light order, as much due to limited offerings as to absence of active demand.

Good to choice, new.....	97 1/2 @ 1 00
--------------------------	---------------

BUCKWHEAT.

There is none arriving and stocks in the hands of millers are of small volume. Prices remain quotably as last noted, but are largely nominal.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

The rains of the week, which have given the greater part of the State a thorough drenching, have materially improved the prospects of the coming bean crop, and in consequence there is less speculative demand for last year's beans at recent full rates. Spot stocks are not heavy, however, especially of choice qualities, and being mostly in few and strong hands, no fears are entertained of any great weakness being developed.

Pea, fair to good, 100 lbs.....	3 10 @ 3 35
Small White, good to choice.....	3 10 @ 3 25
Lady Washington.....	2 90 @ 3 10
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 65 @ 2 85
Bayos, good to choice.....	3 25 @ 3 40
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 10 @ 5 25
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garhanzos, large.....	2 50 @ 2 75
Garhanzos, small.....	2 00 @ 2 25

DRIED PEAS.

Not enough doing in Dried Peas to test values. There are few here and, being almost wholly in the hands of millers, are practically off the market.

Green Peas, California.....	2 00 @ 2 15
Niles Peas.....	2 00 @ 2 15

WOOL.

With favorable weather, Spring shearing will soon be under full headway in the southern part of the State. As the market is practically bare of grease wools, trading in offerings from first hands is for the time being at a complete standstill. Secured stock continues to be shipped East in moderate quantity. Present quotations are wholly nominal. In a week or two preable values for coming clip may be named.

SPRING.

Oregon Eastern, choice.....	13 @ 16
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Oregon Eastern, fair to good.....	11 @ 13
Oregon Valley.....	17 @ 20
FALL.....	
Humboldt and Mendocino.....	16 @ 17 1/2
Middle Counties, defective.....	9 @ 12
Northern, free.....	11 @ 14
Northern, defective.....	9 @ 11
Southern Mountain.....	9 @ 11
San Joaquin Plains.....	— @ —
San Joaquin Lamb.....	— @ —

HOPS.

Beyond a light jobbing trade out of stocks in second hands, there is virtually nothing doing. Dealers have little desire to purchase, and care only for select. The latter would command above quotations, but are not obtainable in a wholesale way.

Good to choice, 1899 crop.....	6 @ 9
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HAY AND STRAW.

The market is dull and weak. The rains which have fallen throughout the State since issue of last review have about wiped out all hopes of any improvement in the hay market during the balance of the current season. Choice to select Wheat hay still sells to comparatively fair advantage, but for all other descriptions the demand is slow at the decidedly low rates ruling.

Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 50 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 50 @ 7 00
Stock.....	4 50 @ 5 50
Compressed.....	6 50 @ 9 50
Straw, 3/4 bale.....	30 @ 45

MILLSTUFFS.

The tendency of values on most kinds of mill offal was in favor of the buyer, more particularly on Bran, offerings of which were liberal as compared with the requirements. Prices for Rolled Barley and Milled Corn were well sustained at below quoted range.

Bran, 3/4 ton.....	12 00 @ 13 00
Middlings.....	15 00 @ 17 00
Shorts, Oregon.....	12 50 @ 15 00
Barley, Rolled.....	16 50 @ 17 50
Cornmeal.....	23 50 @ 24 00
Cracked Corn.....	24 50 @ 25 00

SEEDS.

The market is quiet throughout, and quotable values remain nominally as given in previous review. Alfalfa seed continues in scanty supply. Stocks of most other kinds are too insignificant to admit of any noteworthy transactions.

	Per ctt.
Mustard, Trieste.....	3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25
	Per lb.
Canary.....	3 1/2 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	9 @ 10

BAGS AND BAGGING.

There is a better tone to the Grain Bag market, in consequence of the improved crop outlook, but quotable rates remain undisturbed. There are no fears of any bag shortage. Wool Sacks are ruling steady, with prospects of fairly active inquiry for the same in the near future.

Calcutta Grain Bags, hayer June-July.....	6 1/2 @ —
Calcutta Grain Bags, spot.....	6 1/2 @ —
San Francisco Grain Bags, 22x36, spot.....	6 1/2 @ —
State Prison Bags, 3/4 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/2
Fruit Sacks, cotton.....	6 1/2 @ 7 1/2

HIDES, PELTS AND TALLOW.

The same inactivity and lack of strength previously remarked as existing in the Hide market, especially for Wet Salted, continues to be experienced. Market is rather quiet for Pelts and Tallow, but transactions in the same are at generally unchanged values.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11	10
Medium Steers, 48 to 56 lbs.....	10	9
Light Steers, under 48 lbs.....	9½	8½
Heavy Cow Hides, over 50 lbs.....	10	9
Light Cow Hides, under 50 lbs.....	9½	8½
Wet Salted Kip.....	10	9
Wet Salted Veal.....	10	9
Wet Salted Calf.....	11	10
Dry Hides.....	18	14
Dry Kip and Veal, 11 to 16 lbs.....	17	13
Dry Calf, under 4 lbs.....	18	15
Salted Horse Hides, large.....	2 50 @	—
Salted Horse Hides, medium.....	2 00 @	—
Salted Horse Hides, small.....	1 00 @	—
Dry Horse Hides, large.....	2 00 @	—
Dry Horse Hides, small.....	75 @	1 00
Dry Colts' Hides.....	50 @	75
Pelts, long wool, ¾ skin.....	1 00 @	1 25
Pelts, medium, ¾ skin.....	70 @	90
Pelts, short wool, ¾ skin.....	35 @	60
Pelts, sheafing, ¾ skin.....	20 @	35
Deer Skins, best summer.....	27½ @	30
Deer Skins, good medium.....	20 @	22½
Deer Skins, thin winter.....	— @	10
Elk Hides.....	10 @	12
Tallow, good quality.....	4½ @	5

Tallow, No. 2.....	4 @ 4 1/2
Goat Skins, perfect.....	30 @ 37 1/2
Goat Skins, damaged.....	10 @ 20
Kid Skins.....	5 @ 10

HONEY.

There is a small jobbing trade, both for shipment and on local account. The small lots moving outward are mainly Extracted. Business on local account includes a fair proportion of transfers of Comb honey. Values are fairly steady at the range quoted.

Extracted, White Liquid.....	7 1/2 @ 8
Extracted, Light Amber.....	7 @ 7 1/2
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	11 1/2 @ 12 1/2
Amber Comb.....	8 @ 10

BEESWAX.

Market is lightly stocked and is firm at prevailing values, with no likelihood of soon being lower.

Good to choice, light, 3/4 lb.....	25 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

The demand for all kinds of meats shows reduction for immediate consumption, owing to the Lenten season. Prices for Beef and Mutton remain fairly steady. Veal and Lamb are not in brisk request at full current figures. Hogs did not lack for custom, especially desirable packing stock, and values for same were about as well sustained as during preceding week.

Beef, first quality, dressed, net 3/4 lb.....	6 1/2 @ 7
Beef, second quality.....	6 1/2 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 @ 7 1/2 c; wethers.....	7 1/2 @ 8
Hogs, hard grain fed, medium.....	5 1/2 @ 5 1/2
Hogs, small, fat.....	5 1/2 @ 5 1/2
Hogs, large, hard.....	5 1/2 @ —
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ 5 1/2
Hogs, country dressed.....	5 1/2 @ 6
Veal, small, 3/4 lb.....	7 @ 9 1/2
Veal, large, 3/4 lb.....	7 @ 8
Lamb, spring, 3/4 lb.....	10 @ 11

POULTRY.

Turkeys were in light request at comparatively low figures. The flesh of this fowl is not as a rule desirable at present, showing the effects of grass feed. Old Chickens were in fair supply and not very active demand, market ruling easy at quotations. Young Chickens, particularly Broilers and Fryers, remained scarce and brought good prices. Young Ducks were out of market; large and fat would have brought an advance on recent quotations. Fat Goslings were in fair request at the higher figures lately established. Pigeons sold at about same prices last quoted, with demand only moderate.

Turkeys, dressed, 3/4 lb.....	12 @ 14
Turkeys, live hens, 3/4 lb.....	11 @ 12
Turkeys, live gobblers, 3/4 lb.....	11 @ 12
Hens, California, 3/4 dozen.....	4 50 @ 5 50
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	6 00 @ 6 50
Fryers.....	5 50 @ 6 00
Broilers, large.....	5 00 @ 5 50
Broilers, small.....	3 50 @ 4 50
Ducks, 3/4 dozen.....	4 00 @ 5 50
Geese, 3/4 pair.....	1 75 @ 2 00
Goslings, 3/4 pair.....	2 50 @ 3 00
Pigeons, old, 3/4 dozen.....	1 25 @ 1 50
Pigeons, young.....	1 75 @ 2 00

BUTTER.

While market could not be termed firm, it showed more steadiness than for several weeks preceding. There is a fair shipping demand, which is absorbing the bulk of the surplus. No great breaks in values or serious accumulations of stocks are looked for in the near future.

Creamery, extras, 3/4 lb.....	21 @ —
Creamery, firsts.....	20 @ —
Creamery, seconds.....	19 @ —
Dairy, select.....	18 @ 19
Dairy, seconds.....	16 @ 17
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 15
Creamery in tubs.....	18 @ 21
Pickled Roll.....	— @ —
Firkin, California, choice to select.....	19 @ 21
Firkin, common to fair.....	16 @ 18

CHEESE.

Weakness is fully as pronounced in the market for domestic product as previously noted. Both producers and handlers are anxious to keep stocks cleaned up, not caring to have accumulations at this season of the year. Values are at a narrow range, sales being mostly at 8 1/2 @ 9 c. Eastern cheddars are in very slim stock and are firmly held at 16 @ 16 1/2 c.

California, fancy flat, new.....	9 @ 9 1/2
California, good to choice.....	8 1/2 @ 9
California, fair to good.....	8 @ 8 1/2
California Cheddar.....	— @ —
California, "Young Americas".....	9 @ 10

EGGS.

California, good to choice store..... 11½@12
 Eastern, as to section and grading..... — @—
 Eastern, cold storage..... — @—

VEGETABLES.

Market developed a firmer tone for most of the Spring vegetables now arriving, with supplies showing decrease. Peas sold at a wide range, owing to great difference in quality, most of those now arriving from the South being too ripe to be desirable. Winter vegetables were in rather light stock. Onions were offered sparingly and choice met with a firm market.

Asparagus, # lb..... 5 @ 10
 Beans, String, # lb..... 8 @ 10
 Cabbage, choice garden, # 100..... 40 @—
 Cauliflower, # dozen..... 50 @—
 Cucumbers, hothouse, # doz..... 1 00 @ 1 50
 Egg Plant, # lb..... 10 @ 12½
 Garlic, # lb..... 3 @ 5
 Onions, Yellow, Cal., good to choice. 2 00 @ 2 20
 Onions, Oregon, # cental..... 2 10 @ 2 30
 Peas, Sweet, garden, # lb..... 4 @ 5
 Peppers, Green Chile, # lb..... — @—
 Peppers, Bell, # lb..... — @—
 Rbubuarb, # lb..... 3½ @ 5
 Squash, Marrowfat, # ton..... — @—
 Squash, Summer, # box..... 1 00 @ 1 25
 Tomatoes, Los Angeles, # box..... 75 @ 1 25
 Tomatoes, Bay, # box..... — @—

POTATOES.

Much the same conditions prevailed in the potato market as during preceding week. Potatoes which were frosted or otherwise seriously defective were most in evidence and were salable only at low figures. Choice to select Burbanks were scarce and sold above quotations, bringing in some instances more than at any previous date this season. Sweets were in slim receipt and high.

Burbanks, River, # cental..... 40 @ 90
 Burbanks, Bay counties, # cental..... 60 @ 95
 Burbanks, Humboldt..... 70 @ 1 00
 Burbanks, Oregon..... 50 @ 1 05
 River Reds..... — @—
 Burbanks, Salinas, # cental..... — @—
 Early Rose..... 85 @ 95
 Garnet Chile..... 80 @ 90
 Peerless..... 1 00 @ 1 25
 New Potatoes, # lb..... 2 @ 3
 Sweet, River, # cental..... — @—
 Sweet Merced..... — @—

The Fruit Market.

FRESH FRUITS.

Apple market continues to be lightly stocked and is fully as favorable to sellers as last noted, choice eating apples commanding higher rates than are warranted as quotations. Pears are still offering out of cold storage, but are meeting with scarcely any demand, and are not quotable in a regular way. Strawberries are arriving irregularly, with the quality mostly quite ordinary, and sales mainly within range of \$6@10 per chest.

Apples, fancy, 4-tier box..... 1 50 @ 1 75
 Apples, good to choice, # 50-lb box.. 1 00 @ 1 50
 Apples, common to fair, # 50-lb box.. 50 @ 75

DRIED FRUITS.

The market for cured and evaporated fruits shows the same uninteresting and inactive condition as noted in previous review. Jobbers are filling occasional small orders, but the aggregate is too light to make it deserving of special mention. Sales effected are at generally unchanged rates, and there is nothing to warrant making any alterations in quotations. Selling pressure, however, would necessitate accepting lower figures. There are strong hopes that after the breaking up of the cold weather East there will be a renewal of active inquiry from that quarter, with good reason for anticipating the same, as there are no large quantities of dried fruit now in Eastern hands, and there is ordinarily a fairly liberal amount consumed in the Eastern States during the spring months. No fears are entertained of there being necessity of carrying over into the coming season any cured fruit of consequence, unless it be large Prunes, and these may clean up better than many now expect, although in the matter of values for Prunes, as also for Peaches, Apples and Figs, no material improvement is looked for. Should noteworthy strength be developed, it would indeed prove a surprise and a decidedly agreeable one. Prunes of the small sizes are now practically out of stock, and any under 70-80's are very difficult to obtain in quantity worth mentioning. Selling pressure on Prunes is confined largely to what is termed outside product, or other than Santa Clara fruit.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb..... 10¼@12
 Apricots, Royal, fancy..... 12¼@13
 Apricots, Moorpark..... 13 @15
 Apples, in 50-lb boxes, rings, pressed, fancy..... 7 @—
 Apples, 50-lb boxes, rings, pressed, good to choice..... 5¼@ 6¼
 Figs, White, fancy pressed..... 5¼@ 5¾
 Peaches, unpeeled, good to choice..... 5¼@ 5¾
 Peaches, unpeeled, fancy..... 7 @ 7¼
 Peaches, peeled, in boxes..... 12¼@15
 Pears, unpeeled Bartlett's, halved, fancy. 9 @ 10
 Pears, halved, unpeeled Bartlett's..... 6¼@ 8

Pears, quartered, unpeeled Bartlett's... 6¼@ 7¼
 Plums, Black, pitted..... 6¼@ 7¼
 Plums, White and Red..... 7 @ 8
 Prunes, in sacks 40-50s..... 4 @ 4¼
 50-60s..... 3¼@ 3¾
 60-70s..... 3¼@ 3¾
 70-80s..... 3¼@—
 80-90s..... 3 @—
 90-100s..... 2½@—
 110-130s..... 2 @—
 Prunes in boxes, ¼c higher for 25-lb boxes, ¼c higher for 50-lb boxes.
 4 sizes Santa Claras and equal..... 2¼@—
 4 sizes San Joaquin and Northern... 2¼@ 2½
 Prunes, Silver..... 4 @ 7

COMMON SUN-DRIED.

Apples, sliced..... 4 @ 5
 Apples, quartered..... 4 @ 5
 Figs, Black..... — @ 3
 Figs, White..... 3 @ 3¼
 Peaches, unpeeled..... 5 @ 6

RAISINS.

Market is dull, as is to be expected at this time of year. Stocks are not large, do not include much variety, and are principally in the hands of jobbers. Card rates as fixed by the Growers' Association are unchanged.

F. O. B. FRESNO DELIVERY.

London Layers, 6-crown, # box..... — @—
 do do 5-crown, # box..... — @—
 do do 4-crown, # box..... — @—
 do do 3-crown, # box..... 1 60 @—
 do do 2-crown, # box..... 1 50 @—
 Valencia Layers, # 20-lb box..... 80 @ 1 00
 (Usual advance for fractions.)

Loose Muscatel, 3-crown..... 6¼@—
 Loose Muscatel, seedless..... 5 @—
 Pacifics.—2-crown loose Muscatel, 5¼c; 3-crown, 6c; 4-crown, 6¼c; seedless, 4¼c.
 Orientals.—2-crown loose Muscatel, 4¼c; 3-crown, 5¼c; 4-crown, 6c.
 (Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, # lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, # lb., 8¼c; choice, 7¼c; standard, 6¼c; prime, 5c. Unbleached, 5c.

Loose Valencias.—Fancy, # lb., 5¼c; choice, 4¼c; standard, 3¼c.

Valencia Clusters.—Fancy, # lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Orange market displayed less activity than for preceding week, the weather being cooler, and for other than most select Navels there was an absence of firmness. Common to medium qualities were in heavy supply. Fancy Navels commanded an advance on quotable rates, but transfers of the same were mostly of small quantities. Lemon market was in no better condition than last noted, demand being only fair, with supplies sufficient to accommodate a much more extensive inquiry than existed. Limes were scarce and high most of the week, but a fresh invoice from Mexico has just arrived, causing an easier tone at close.

Oranges—Navels, # box..... 1 25@2 50
 California Seedlings..... 75@1 25
 California Mandarin, # small box..... — @—
 Grape Fruit, # box..... — @—
 Lemons—California, select, # box..... 2 25@2 50
 California, good to choice..... 1 75@2 00
 California, common to fair..... 1 00@1 50
 Limes—Mexican, # box..... 5 50@6 00
 California, small box..... 50@1 25

NUTS.

Dullness continues to be experienced in the Almond market, free sales being impossible at the current nominal quotations. Values for Walnuts are without quotable change, but stocks are light and include few of desirable quality. Peanuts are offered sparingly, and both domestic and imported are meeting with a firm market.

California Almonds, shelled..... 14 @ 17
 California Almonds, paper shell, # lb..... 10 @ 11
 California Almonds, soft shell..... 7 @ 8
 California Almonds, hard shell..... 4 @ 5
 Walnuts, White, soft shell..... 9 @ 10
 Walnuts, White, California, standard..... 7 @ 8
 Chestnuts, California Italian..... 8 @ 10
 Peanuts, California, fair to prime..... 5 @ 6
 Peanuts, Eastern, hand-picked..... 6 @ 6¼
 Pine Nuts..... 5 @ 6

WINE.

The market is exceedingly slow, so far as trading in dry wines of last year's vintage is concerned. Quotable rates remain unchanged, being 15@20c. per gallon as to quality, quantity and other conditions, San Francisco delivery. Dealers are holding off the market, showing indifference to offerings, as a rule, and thus endeavoring to break prices, but they are not meeting with any appreciable success. The British ship Aristides, clearing Monday for London, carried as part cargo 27,703 gallons wine.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks..... 121,155	4,150,584	3,532,275
Wheat, centals..... 491,190	4,375,702	2,363,159
Barley, centals..... 25,890	4,334,359	1,143,205
Oats, centals..... 9,060	621,808	547,000
Corn, centals..... 40	94,424	126,865
Rye, centals..... 450	89,910	22,885
Beans, sacks..... 4,989	324,586	321,986
Potatoes, sacks..... 37,335	937,590	887,893
Onions, sacks..... 2,167	134,568	138,890
Hay, tons..... 1,932	116,899	100,478
Wool, bales..... 98	36,275	32,677
Hops, bales..... 14	9,114	11,307

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks..... 97,572	2,826,716	2,315,372
Wheat, centals..... 360,986	3,664,526	1,557,966
Barley, centals..... 11,563	3,473,348	366,180
Oats, centals..... 1,912	32,792	17,584
Corn, centals..... 1,275	13,815	15,235
Beans, sacks..... 276	20,997	74,677
Hay, bales..... 9,680	97,835	49,206
Wool, pounds..... 17,125	3,985,992	1,655,334
Hops, pounds..... 1,364	942,801	1,274,062
Honey, cases..... 30	3,307	4,753
Potatoes, packages..... 460	55,659	37,151

California Dried Fruit at New York.

NEW YORK, March 7.—Evaporated apples, common, 4½@5½c; prime wire tray, 6@6¼c; choice, 7@7½c; fancy, 7½@8¼c.
 California dried fruits dull at unchanged figures.

Prunes, 3½@6c.
 Apricots, Royal, 13@15c; Moorpark, 15@18c
 Peaches, unpeeled, 7½@9c; peeled, 18@22c.

KENDALL'S SPAVIN CURE.

Lemoore, Kings Co., Cal., Feb. 6, 1899.
 Dr. J. B. Kendall Co., Dear Sirs:—I used two bottles of Kendall's Spavin Cure on a young horse of mine for a curb, and I believe he is as sound today as he ever was. Yours obligingly,
 A. W. GRAVES.

WANTED --- Jersey Bull,

Also Young Cows,

Must be well bred, in exchange for Cream Separator or other Dairy or Farm Machinery. Give description and price asked.

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WE MAKE TO ORDER
 Buggy Tops, Cushions,
 Carriage Tops, Lazy Backs,
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 Wagon Tops, Dust Hoods,
 Dashes, Fenders.
 Old Tops, Dashes and Fenders re-covered if sent to us. We sell Trimming Material of all kinds, also Top Dressing, Chamolis Skins, Sponges, etc. Write for Prices and How to Measure. CALIFORNIA TOP CO., 222 Mission Street, San Francisco, Cal.

NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California street, San Francisco, at 10 o'clock A. M., Wednesday, the 11th day of April, 1900
 I. C. STEELE, President.
 CHARLES WOOD, Secretary.

No crop can grow without Potash.

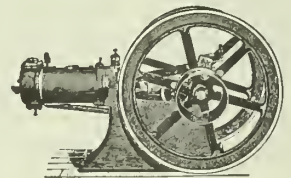
Every blade of Grass, every grain of Corn, all Fruits and Vegetables must have it. If enough is supplied

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Send for our books telling all about composition of fertilizers best adapted for all crops. They cost you nothing.

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 For COUGHS and COLDS.
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"Pasteur" Black Leg Vaccine.

The original and genuine preventive vaccine remedy for Black Leg. Officially endorsed in all the cattle-raising States. Successfully used upon 1,500,000 head in the U. S. A. during the last four years. Write for official endorsements and testimonials from the largest and most prominent stock raisers of the country. "Single" treatment vaccine for ordinary stock; "Double" treatment vaccine for choice herds.

REGISTERED—"BLACKLEGINE"—TRADE MARK.

"Pasteur" single treatment Black Leg Vaccine READY FOR USE (no set of instruments required). Sold in packages:—No. 1 (10 head) \$1.50; No. 2 (20 head) \$2.50; No. 3 (50 head) \$6. Easily applied. No experience necessary.

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Catalogue Free.
 Special Introductory Price.

Strongest, Best and Neatest
 HANDY WAGON
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All Steel Except Tongue and Coupling Pole.

LOG : : : :
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Weight, 600 lbs.
 Will Carry 4000-lb. Load.
 Most Profitable Truck Made,
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Killed=Dead.

You know that the horse buyer knocks off \$50 or more for every lump or blemish on a horse. Get full value for your horse—don't have any lumps. Cure him with

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It is guaranteed under a forfeit of \$100. to cure any case of horse all, colic, curbs, splints, contracted tendons, thrush, etc. Tuttle's Family Elixir cures rheumatism, bruises, sprains, etc. Sample of either Elixir for 6c. In stamps to pay the postage. Used and endorsed by Adams Express Company. For Sale at all Druggists. Dr. S. A. TUTTLE, 33 Beverly St., Boston, Mass.

VETERINARIAN.

Answers by Dr. Creely.

TREATMENT FOR BLOAT.

TO THE EDITOR:—My sheep have been on a pasture, containing considerable burr clover, from 10 o'clock A. M. until sundown each day for the last three months, and during the last few days some of them have bloated. Not being familiar with any treatment, I tapped them with my knife, being the only instrument at hand, and they appear to be getting along all right since. Will Dr. Creely kindly give any other treatment or more fully explain tapping?—READER, Concord, Contra Costa county.

Give a purgative of either Glauber salt or raw linseed oil. The following prevents bloating: Soda bicarb., 1 pound; charcoal, 1 pound; carbonate ammonia, 1 ounce; chloride sodium, 2 ounces. Mix and give a teaspoonful two times daily.

Tap on the left side; draw a line from the angle of the hip to the last rib in the center. Insert a trocar and canula downward, forward and inward. Never use a knife unless absolutely necessary.

LUNG FEVER.

TO THE EDITOR:—Please inform me what to do with a sick horse, whose first symptoms were heavy and quick breathing, dull eyes, sluggish movement twenty-four hours after, partly stiff in hind parts and legs swollen; does not seem to have any pain; ears are warm.—CHAS. J. SCHMID, Folsom.

You should get a veterinarian. The disease is lung fever. The following is a good recipe: Quinine, 1 ounce; antipyrine, 1 ounce; spirits of ammonia Menderer, 4 ounces; best whiskey, 1 quart; water, 1½ pints. Mix and give 2 ounces every four hours; syringe on tongue. DR. E. J. CREELY.

510 Golden Gate Ave., S. F.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

PROTECTOR AGAINST STEAM FROM KETTLES.—Coby Lorenzen, Oakland, Cal. No. 643,877. Dated Feb. 20, 1900. When vessels such as tea kettles which are used to boil water and other like purposes, have to be again filled with water, it is usually necessary to remove the cover from the top and this allows a volume of hot steam to escape which is dangerous to the operator. This invention is designed to protect the user from this steam and to provide for the filling of the kettle without allowing this volume of steam to escape in such a manner as to injure the user. The attachment consists of a flanged cover adapted to be seated in the top opening of the vessel and formed rigid, with a receiver which is provided with a removable supplemental cover. This receiver has a tubular extension from its lower end which projects to a point near the bottom of the vessel, and the cover has a steam discharge at one side protected by an enclosing hood.

CREMATORY CARRIAGE.—Peter Beanson, San Francisco, Cal., assignor to G. R. Fletcher, of same place. No. 643,837. Feb. 20, 1900. This invention relates to a carriage which is designed for use in connection with a crematory furnace. It consists of a lower and an upper carriage, the first named traveling upon a permanent track to advance it to a certain point with relation to a furnace front. Means carried by the apparatus serve to check

the lower carriage at this point, at the same time allowing the upper carriage to move forward upon the lower one so as to project the support of the body into the furnace, and at this point the upper carriage is checked, and there are means for lowering and depositing the body upon a supporting cradle where it is to be destroyed. After the body has been thus deposited the carriages are successively returned, the upper one upon the lower, and the lower one withdrawn to its normal position.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING FEB. 20, 1900.

- 643,737.—WARDROBE—Lizzie M. Adams, Portland, Or.
643,837.—CREMATORY CARRIAGE—P. Beanson, S. F.
643,626.—TRUCK LIFTER—J. H. Blake, Winslow, Ariz.
643,808.—GAME BOARD—Brewer & Hayes, Watsonville, Cal.
643,838.—PLOW—A. G. Carter, Fresno, Cal.
643,740.—POTATO DIGGER—J. T. Cecil, Los Angeles, Cal.
643,839.—QUICKSILVER FURNACE—H. C. Davey, Calistoga, Cal.
643,635.—VAPOR BURNER—F. B. Duffy, Los Angeles, Cal.
643,793.—SHIRT—E. R. Gould, Spokane, Wash.
643,746.—GAS GENERATOR—L. R. Le Lande, Los Angeles, Cal.
643,877.—PROTECTION AGAINST STEAM FROM KETTLES—C. Lorenzen, Oakland, Cal.
643,881.—RAILROAD SWITCH STAND—W. McCaffery, Tyler, Wash.
643,748.—EDUCATIONAL CHART—C. T. Meredith, San Diego, Cal.
643,749.—TELEPHONE DIRECTORY—L. H. Mertz, Los Angeles, Cal.
643,879.—FARE REGISTER—J. G. Miller, S. F.
643,971.—SPINNING FRAME—J. H. Northrop, Tustin, Cal.
643,777.—GAS GENERATOR—C. Ogburn, Riverside, Cal.
643,849.—THRASHER FEEDER—Patterson & Hill, Madera, Cal.
643,985.—PUMP PISTON—A. J. Salisbury, Los Angeles, Cal.
644,034.—ACETYLENE GENERATOR—Schuler & Granat, Stockton, Cal.
643,782.—FIBER PULLEY—J. R. Thame, Holcomb Valley, Cal.
643,857.—EXCAVATOR—E. M. Zahl, Portland, Or.
32,252.—DESIGN—C. P. Littlepage, Balena, Cal.



THE WHEEL OF TIME

For all time is the

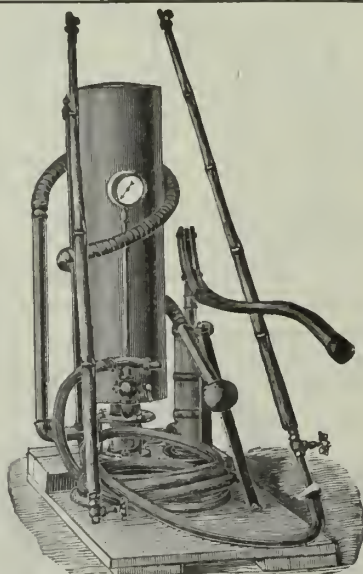
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We make them in all sizes and varieties, 10 FT. ANY AXLE. Any width, any width of tire desired. Our wheels are either direct or stagger spoke. Can FIT YOUR WAGON perfectly without change.

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No drying out. No resetting tires. Cheap because they endure. Send for catalogue and prices. Free upon request.

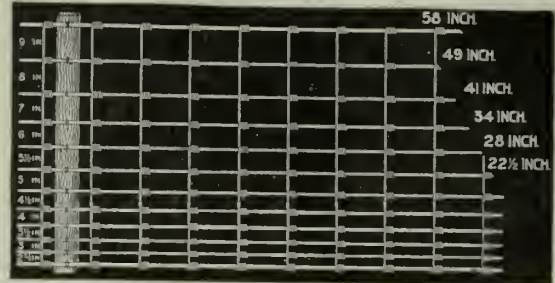
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Specialty is a Spray Pump that will do the Best Work, the Most Work at the greatest Saving of Labor, That Will Not Rust, that is durable in all its parts, and prices as low as Good material and workmanship will admit of. Send for catalogue with prices, formulas of washes and suggestions on the methods of spraying.

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No Trouble With This Fence.

It is built to kill trouble, and does kill trouble wherever it is put up. Why not? It is made of large Spring Steel Wires. It is heavily galvanized. It provides for expansion and contraction. All required of the fence user is to stretch it tight—then it stays up and is a fence for a lifetime. The

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are sold by agents everywhere, at the lowest price for which a perfect fence can be sold. If you fail to find our agent in your town, write to the manufacturers,

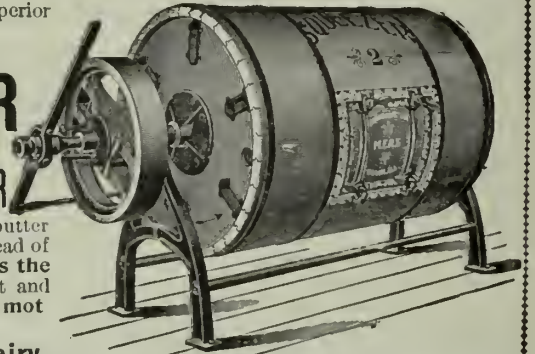
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THE SQUEEZER COMBINED CHURN AND WORKER

squeezes the water and butter milk out of the butter instead of grinding it. It preserves the grain, distributes the salt and color evenly and prevents mot tles. It is



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In no respect like the Sherwood or other heavy steel rigging. Constructed on an entirely different principle. Light (weight 37 lbs.), very strong and perfectly flexible. Consists of two short wood bows, bent to fit the horse and not project beyond the side, suspended back of forelegs by padded back bands and covered by adjustable padded belly bands. Short leather tugs with adjustable buckles and cockeyes connect the bow ends with the hames, making the draft direct and just as in the old harness. The team is coupled up by a free-jointed straight-wood evener, hooked into the loop in each bow. Can be separated or unharnessed in an instant. Each horse perfectly independent in his movements and can close up or spread apart in working. A back strap connects the harness with the back pad and a short draft chain runs from the evener-clevis to the load. A perfect all-round Farmers' Handy Harness for all low down field work. Used and approved by the best up-to-date farmers and fruit growers in the country. We don't furnish collars, headstalls or lines. Price, \$14.50, cash with order, freight prepaid. If not perfectly satisfactory return at our expense and money will be refunded. In ordering give size collar used.

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Topics for March.

TO THE EDITOR:—Topics for March are: (1) Trusts: What Legislation, National or State, is Needed for the Judicial Control of Trusts? (2) Postal Savings Banks: Is Legislation Providing for the Establishment of Postal Savings Banks by the U. S. Government Desirable?

TRUSTS.—In regard to trusts the discussion may well take the form of restrictive legislation and to what extent National or State legislation should regulate the affairs of combinations of wealth known as trusts. It is generally admitted that one of the most damaging features of these combinations is the fictitious stock created which bears little more relation in real value to the original stock than does the counterfeit bill to genuine currency. One proposition to suppress this evil is to compel publicity in regard to all the affairs of corporations which relate to the public welfare. Another proposition is to tax the full amount of the capital stock of the corporation or trust.

It is questionable policy to permit one State to legislate for corporations to do business in another State, and a very sensible proposition is to permit no corporation to do business outside the State in which the charter is granted, except under the supervision of Congress, with such restrictions as will prevent overcapitalization and make publicity of acts compulsory.

Still another proposition is to remove every artificial advantage which is afforded any monopoly by reason of the tariff, and to place all articles, the sale of which is controlled in the United States by trusts, on the free list.

Aaron Jones, Master of the National Grange, in his address at the Trust Conference held in Chicago, Sept. 13 to 16, 1899, says in part: "It occurs to me that the first step to be taken in remedial legislation is to pass a well considered anti-trust law by the Congress of the United States, clearly defining what practices on the part of any corporation would be injurious to public policy and cripple or injure individual enterprise, thrift and the acquirement and use of the property of any citizen of the republic, and to supplement this law by equally well considered anti-trust laws by each of the several State legislatures to reach and apply to such phases of the matter as could not be reached by Congress. To make these laws effective, it is absolutely necessary to know what these trusts and combinations are doing. It would therefore seem that these laws should provide for Government and State inspection of their business, of their books, agreements, receipts and expenditures, and the right to examine all vouchers and records of the meetings of directors and managers. Corporations may object to this inspection on the ground that it would expose what they claim as their private business. In answer to this it might be said that citizens of the State who grant the articles of incorporation or allow them to do business in the State, with special privileges, have a right to know that the privileges have not been used in opposition to public interests.

"If the corporations are conducting legitimate business no injury will be done them by inspection. If they are using the powers granted to them by the State to crush out other enterprises and deprive other citizens of the use and value of their property in order to avoid competition, they are using their power and influence in restraint of trade; if they are using large sums of money to illegally control political parties or to control legislation, as was testified before the congressional investigation that the 'Sugar trust made it a rule to make political contributions to the Republican party in Republican States and to the Democratic party in Democratic States,' then these practices ought to be stopped. If they have agreements with railroad companies for rebates in freight, as has been shown to be the case in the Standard Oil trust and many others, the practices should

be punished by such penalties as will effectively stop them.

"In speaking for the agricultural interest of our country, that great basic industry that makes it possible for the other industrial interests of our country to prosper, I desire to say these practices and conditions most seriously and injuriously affect it, and farmers demand of the legislatures of the several States and of the National Congress well considered and effective legislation that will prevent the injurious practices of trusts and combinations.

"I believe it to be the settled purpose of a majority of the people to hold our representatives in Congress and in the several legislatures personally responsible for the enactment of such laws as will restrain and prevent the continuance of acts of trusts that are against public interests. I do not think that the people hold any one party responsible for the present conditions, but I do believe that each individual member holding official position will be and is held responsible for his voice and vote and action in the enactment of demanded remedial and protective legislation."

Since the Chicago conference the Supreme Court of Illinois, in the case of Harding against the American Glucose Company, has rendered a decision that is the hardest blow to trusts ever given in a Court ruling. In this opinion it is held that the transfer of the property of the American Glucose Company to the Glucose Sugar Refining Company is illegal and the case is remanded to the lower courts with instructions to set aside the deed of the transfer, and all the contracts conveying the property of the American Glucose Company to the Glucose Sugar Refining Company. This is the first time in the history of the country that the courts have been called upon to pass upon the legality of trusts as they are now formed, and the opinion affects not only trusts in Illinois, but those formed in other States. In rendering the opinion the Court used this language: "The American Glucose Company and the other persons whose names appear in the record created and entered into a trust or combination with themselves and with one or more of the five corporations other than the American Glucose Company, who conveyed their plants to the Glucose Sugar Refining Company, to regulate and fix the price of glucose and grape sugar and their products and by-products; these parties under the law were guilty of a conspiracy to defraud." This decision is in full accord with the position taken by the Grange. On Nov. 4, 1899, the State's attorney of Illinois, De Neen, commenced twenty-five other suits in the Circuit Court against corporations for failing to comply with the anti-trust law of Illinois.

Petitions to Congress for adequate anti-trust legislation should be circu-

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latea at once, signed by Grange members and other farmers, and immediately forwarded to the legislative committee of the National Grange, 514 F street, Washington, D. C.

In your issue of next week we will take up the subject of "Postal Savings Banks." J. S. TAYLOR, Lecturer California State Grange. Napa, Cal.

From the Worthy Secretary.

To THE EDITOR:—As almost all of the Granges in the State have sent in their reports for the quarter ending Dec. 31, 1899, I thought that others besides myself would be interested to know how our Granges were increasing.

The corps of officers who were elected and installed at the meeting of the State Grange held in October in the city of Napa decided at the outset to do all in their power to make this year one of the landmarks in the history of our Order, and to materially increase the membership in this our fair State.

We believe that the Grange is the organization to which every farmer and his family should belong, not only for the social benefit, not only for the good that he himself is to gain, but that he may keep in touch with the times and put his shoulder to the wheel and assist to make our worthy organization one of the best in the nation.

A step is being taken in some of the Granges by which it is hoped that the Grange here may be of financial assistance to its members, as it is in the East. In the East, however, the membership is many times ours, and they have a strength to carry out almost any plan. This is what is needed in California, and this is why we are urging every farmer to interest himself in the Grange, and every Grange and Granger to do all in their power to increase the membership and build up our Order.

NEW MEMBERS.—Many of the Granges have already responded to our plea, as the reports for the December quarter show. The following is the list of Granges and the number of new members initiated or reinstated during the quarter. We call this our "Roll of Honor":

Sebastopol eleven, Grass Valley ten, San Jose ten, Two Rock nine, Napa seven, Petaluma seven, Sacramento seven, Los Gatos five, Selma five, Sonoma Pomona five, Central four, Geyersville four, Progressive four, Bennett Valley three, Fair Oaks three, Santa Rosa three, American River two, Magalia two, Elk Grove one, Glen Ellen one, Temescal one.

We would wish to compliment these Granges and urge them to keep on with their good work. We also invite and urge every Grange in the State to strive for a place on the "Grange Roll of Honor," which will be sent to the PACIFIC RURAL PRESS at the end of every quarter.

MISS LAUROLA S. WOODHAMS, Sec. California State Grange.

Irrigation and Drainage.

A book just published by The Macmillan Company will be found interesting and suggestive by many Californians. It is entitled "Irrigation and Drainage," and is by Prof. F. H. King of Wisconsin University, whose earlier work on "The Soil" has proved so satisfactory. It is a work of 500 pages, 12 mo., fully illustrated, and contains both clear statements of principles and descriptions of practice, citing important irrigation works and their services in various parts of the world. Though it does not contain descriptions of California methods, which would make it available as a handbook in this State, it is deserving of a place in the libraries of all irrigators for the clear statements of the principles of plant growth, the movement of water in soils, the efficiency of mechanical means and appliances, etc., upon which the author is a distinguished authority. The book is furnished by the PACIFIC RURAL PRESS at \$1.50 per copy.

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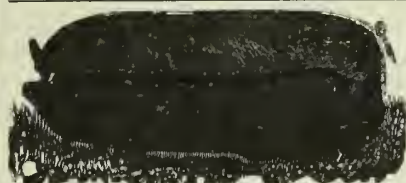
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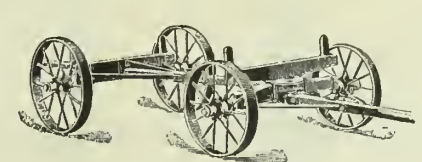
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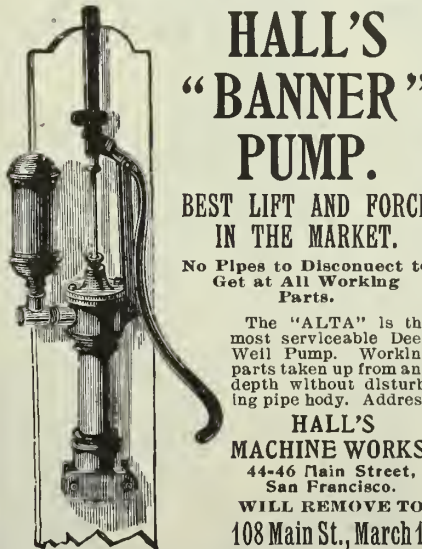


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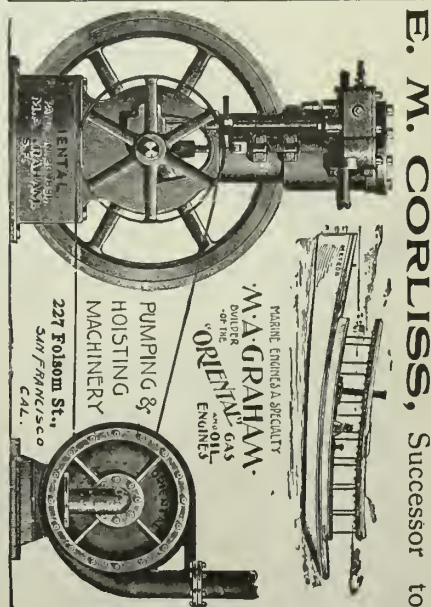
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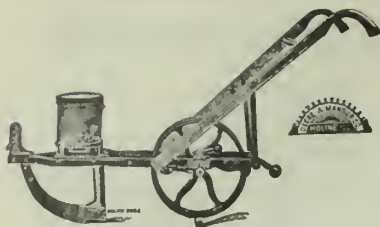
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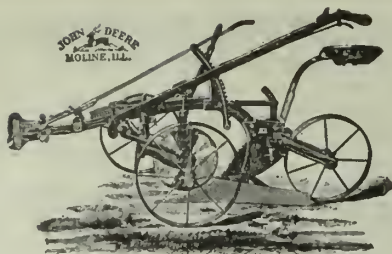
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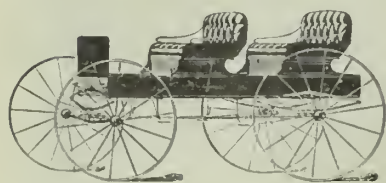
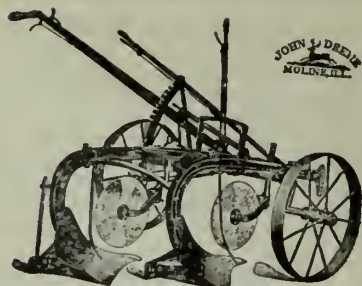
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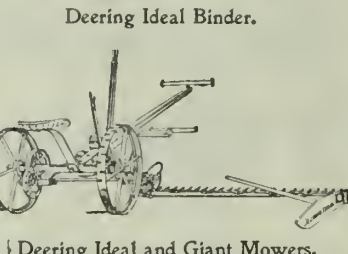
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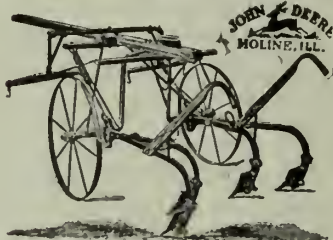
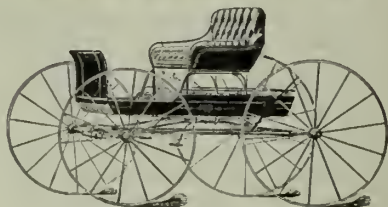
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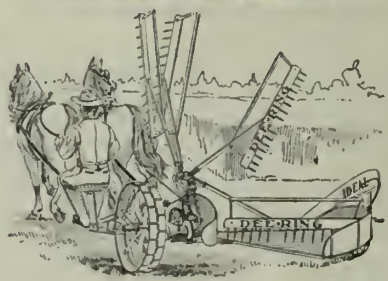
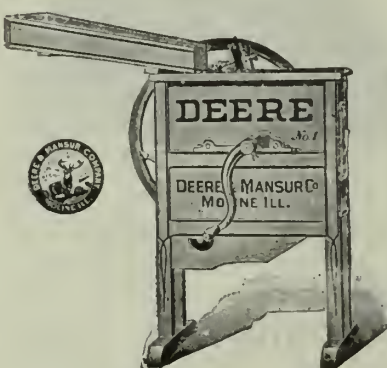
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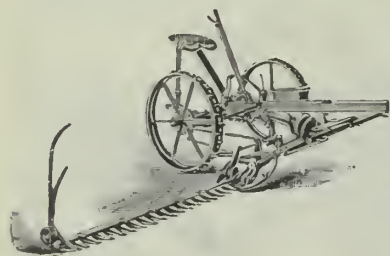
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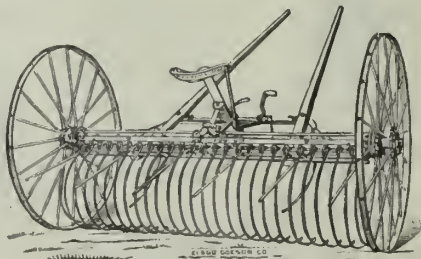
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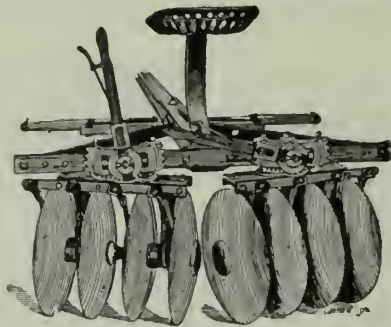
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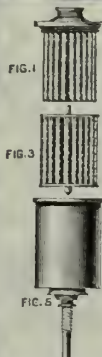
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Victorious Progress of the United States, have tried to make a big bugbear of using hot water to flush the bowl, but now this, their last criticism, is overcome, and they are at loss to know what to harp on to prejudice purchasers against the Improved U. S. and reduce the constantly increasing sales. Write for our 1900 or "New Century" catalogue giving full particulars.

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Vol. LIX. No. 11.

SAN FRANCISCO, SATURDAY, MARCH 17, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Grafting the Walnut.

We are receiving many inquiries for information about grafting the walnut, both with reference to establishing hardier varieties upon kinds which locally fail and in establishing the English walnut upon the native black walnut. It is a timely subject, for the best time to do the work is just as the growth is starting, and it is a very important subject, because so many unsatisfactory trees have been turned to success and so many black walnut trees have been taught to give nuts as well as shade. The walnut is not so easy to graft as some other trees, and yet, if proper methods are skillfully followed, there will be a very satisfactory percentage of success. The illustrations on this page show two ways in which the work can be done. We are indebted for the use of them to B. M. Lelong, secretary of the State Board of Horti-

culture, who has given personal attention to the growth of the walnut for many years.

The upper group of engravings illustrates the common method of top-grafting as applied to the walnut. The reader will notice the manner of cutting the scion so as to give a good long tongue of wood on the outside of the pith. This brings the strength of the scion where it is to unite with the inner bark of the stock. The other features are readily understood. The tying and waxing have to be done with extra care so that no chance for the intrusion of air is allowed. This method is available for working in the stem of a young tree or in the branches of an older one. It is possible, also, to work in larger wood. Mr. Felix Gillet of Nevada City long ago pointed out in our columns that in splitting the walnut stock for a top-graft it is better not to split through the central pith, but to one side of it—thus, instead of a single split being made through the center, as one would in top-grafting an apple, for instance, two splits can be made, one on each side of the pith. If the scions are properly inserted and tightly bound with a wax band, it is possible to work stocks of from 3 to 5 inches diameter successfully. This work should be done in the spring as the sap is beginning to flow.

The other group of engravings on this page exhibit the prong or twig graft which Mr. Lelong has used for twenty years or more, and believes he was first to employ it. The scion in the picture is seen to be a short twig with a plate of bark cut from the older growth from which the twig has grown.



Scion.

Scion in Place. Scion Tied and Waxed—Growing.

Top Grafting the Walnut.

This is cut carefully, the wood is removed with the point of the knife, as shown in the picture. The branch to be grafted is first cut off with a thin saw and a slit is made in the bark as is made for budding. The plate of bark of the twig is then carefully pushed down into this slit and is shown in place in another picture. The tying is also shown and the new growth of the twig is still another engraving. This last picture shows how the cut end of the stock above the twig graft should be waxed to prevent dying back. Mr. Lelong points to the fact that the stock should not be cut back to the graft too soon; nor should the string be too soon removed, but rather be loosened before it cuts into the bark, but still left in place to hold the bark from turning back. After growth has attained a good length these supports may be removed, but as the growth is tender it should be staked or sustained by a sidestick lashed to the limb until the wood hardens a little.



The Scion. The Slit in the Stock.



Twig Graft in Place.

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Growth on Twig Graft.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, March 17, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Top Grafting the Walnut—Scion; Scion in Place; Scion Tied and Waxed—Growing; Mr. Lelong's Method of Prong or Twig Grafting Illustrated—The Scion; The Slit in the Stock; Twig Graft in Place; Twig Graft Properly Tied; Growth on Twig Graft, 161.
EDITORIAL.—Grafting the Walnut, 161. The Week; Who is the American Farmer? 162.
QUERIES AND REPLIES.—Cutting Back at Planting; Treatment of Palms; Why Do Dewberries and Blackberries "Peter Out?" Almonds Drooping; Fertilizers for Orchard; Snails or Slugs; Climbing Roses; Brome Grass, 163.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending March 12, 1900, 163.
STATE BOARD OF AGRICULTURE.—California Agriculture in 1899, 164.
THE APIARY.—California Honey Interests, 165.
THE VINEYARD.—Resistant Vines in California, 165.
AGRICULTURAL SCIENCE.—Agricultural Education, 166.
THE DAIRY.—Treatment of Bloat; Stopped at the Threshold, 166.
THE FIELD.—The Broom Corn Product, 166.
HORTICULTURE.—Tar-Resin Compound for Tree Wounds; Look Out for Frost, 166.
AGRICULTURAL REVIEW.—167.
THE HOME CIRCLE.—Each in All; One Side of the Argument; Women as Spies, 168. About Prunes; Who May With the Shrewd Hours Strive? The All-Important Hat; Home Remedies; Points Good on Wash Day, 169.
THE MARKETS.—Produce Market; Fruit Markets, 170-171.
THE VETERINARIAN.—Answers by Dr. Creely—Warts on Teats; Treatment for an Old Sore; Kidney Complaint; It is not Anthrax, 171.
PATRONS OF HUSBANDRY.—From the Worthy Master, 174.
Tulare Grange, 175.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 172. Investigation of Forest Fires, 173.

The Week.

The season is advancing rapidly and for the most part with the fairest auspices. In the aggregate the surplus production will be large and there will be a large accretion also of agencies and facilities for larger and better work in the future. The increase of flocks and herds has been satisfactory and much of this will now be added to the breeding stock for the future. There have also been notable improvements in nearly all lines other than live stock and with the realization of crops which now promise so well there will be notable activity during the summer and fall in all directions of improved equipment.

Wheat has not changed since our last report. Foreign prices are a shade better, but the local market is still dull. Ships are rather scarce and this may have something to do with it. John Bull is using much shipping in his South African excursion and if he sets it free soon we shall have all we need before the new crop comes in. Barley and oats are unchanged and corn is still firm in sympathy with Eastern prices. Hay is no better and, though not quotably lower, it is weak. Bran is a little easier and other millstuffs unchanged. Beef and mutton are quiet at old rates: hogs are easier but without change, though prophets are foretelling a drop, as receipts are rather liberal. Butter is firm at 1c advance. There is a shipping demand which helps out, and the fact that the lower coast counties are busy supplying Los Angeles instead of shipping a surplus this way, helps local prices. It looks as though the south would have little to come northward this year. Cheese is steady for local makes and Eastern cheese is stiff. Eggs have advanced from 3 to 5 cents. There is a rumpus in the local trade, which has raised values, and they may be so high as to check Eastern shipment; but there is a high tide in the egg market this week. Beans are moving fairly, but are unchanged. Dried fruits are very quiet; stocks are not large and are expected to clean up, but jobbers would like to see large prunes and peaches go a little faster. Choice apples are above quotation and fancy Navel oranges are firm, but there is much citrus stock which has to go low. Lemons sell freely, but are too abundant to advance values. Onions and potatoes are still doing well for good stock. Shearing is going on, but new wool is not arriving yet.

The work of organizing the California Cured Fruit Association is proceeding very satisfactorily. Lists

of contract signers are coming in from the directors and other promoters at a good rate, and there are still about two weeks before the time limit is reached.

Who Is the American Farmer?

The Secretary of Agriculture is renewing his efforts to provide further competition with the established farmers of the United States by "developing" the agricultural possibilities of Alaska. He believes that he can get wheat, barley, oats, rye and other grains to grow there in abundance; "there seems to be no doubt that animal industry can be successfully prosecuted;" and it is thought that something can be done with fruit and vegetables. The land, we suppose, may be had for the asking, and will largely be taken up by aliens, whom the American Secretary of Agriculture will do his very best to help rival American farmers now in business! If the man were hired to do everything possible to depress American agriculture, reduce its profits, and draw off the men who ought to furnish low-priced farm labor, he could hardly fulfill his commission better than by exerting himself in this fashion. To imagine that Mr. Wilson does not perfectly understand that every new acre brought under cultivation is an added weight around the neck of our farming interest would be simply to insult him by setting him down as a fool.—Country Gentleman, New York.

We make no defence of Secretary Wilson. He needs none. Such condemnation is loud praise. That his policy of building up the agriculture of this country through the effort to make every possible acre of the national domain productive, and every holding of such acres capable of supporting its owner and winning for him, through international trade, the best the world affords in the way of comfort, enlightenment and competency, is opposed by those who are avowedly at enmity with such patriotic and humane design, is the clearest demonstration of his acumen and breadth and fitness for the honorable place which he holds in the national council. But though Secretary Wilson needs no defence from condemnation which really exalts him, the "American farmer," who is maligned and impeached under the guise of advocacy in the paragraph we have quoted above, may be expected to repudiate the false friendship.

The narrow, sectional and un-American sentiments of our Eastern contemporaries are unworthy of him. Were they spoken by a less reputable journal we should pass them by unnoticed, as the special pleading of a journalistic demagogue. Such things are being said with this apparent motive, and we are passing them by continually; but when such views are avowed by those who have claim to sincerity, attention should be called to the errors in the hope of their correction.

The paragraph is ostensibly written in defense of the "established farmers of the United States." Established when and established where? In what year and on what meridian or parallel shall the lines of time and place be drawn? We lived in the Empire State when there was protest against the products of the Mississippi valley, when Western corn and Western cattle threatened ruin to the farming of the Atlantic States, when the specially ordained dairy region of the globe was held to be New York and a little piece of Ohio, and when any effort to extend Western produce of any kind, or to transport it cheaply, was held to be a menace to the livelihood of the "farmers now engaged in the business." It was a senseless and unjust claim a generation ago, and it is no better now. But there was far more excuse for holding such a view then than now, because then there was apprehension without definite appeasement; now there is demonstration beyond question that all such apprehensions are unwarranted. The West has been developed a hundred fold in a quarter of a century; the West has proved to be an inland empire of wealth-winning for itself and wealth-bestowing upon the East, which none could foresee or prophesy. Our contemporaries forgets that the Western progress which he feared thirty years ago is now the manifest glory and mainstay of the nation.

And by whom has this vast accomplishment been attained? By the American farmer developing land "had for the asking and largely taken up by aliens." And what should have been the result? Evidently to "depress American agriculture, reduce its profits and draw off men who ought to furnish low-priced farm labor." But what has really been the result? It has ennobled American agriculture and made it peerless in the world; it has advanced the producer's profit by lifting him from the pitiable level of swapping at country stores to dealing in gold at established world-wide values; it has drawn away from menial places and scanty subsistence hundreds of

thousands and constituted them independent, prosperous American citizens.

If we understand our contemporaries aright, these men ought to have been held down in whatever places they were born, to "furnish low-priced farm labor." Does he think for a moment that the old Eastern farmer who feels his heart aglow with proud satisfaction at the success of his sons and daughters in the West will sympathize with his claim that they should have been checked in their noble aspirations and endeavors, that they might "furnish low-priced farm labor" in their old homes? Does he imagine that any true American will sympathize with his claim that those thousands of alien birth who have been so largely instrumental in building up the vast industries of the West, and whose children are leaders in industry, in patriotic devotion and citizenship, should have been excluded from the country or held at the East to compete with the children of Eastern farmers in "furnishing low-priced farm labor?" The idea is utterly abhorrent and offensive.

But our contemporary may forget his record as a pessimist of the past, and may claim that he accepts all that has been done. We could perhaps grant that were it not a fact that he takes every occasion, in season and out of season, to scoff at measures for Western advancement and belittle efforts made in its interest. For this reason we have asked him when and where the line should be drawn. At what parallel or meridian shall the barrier be raised to check American progress? Does he not see that there can be no such line? The American spirit will not brook any such arbitrary limitation. It will proceed, making its own advances, throwing up its own safeguards, establishing itself firmly wherever opportunity offers reward for hard work and clear thinking, and you can no more check its progress by backbiting those who promote it than you can broom back the tide of the ocean.

It is not true that "every acre brought under cultivation is an added weight around the neck of our farming interest." The fact is rather that every honest development has had the contrary effect. The farther East is now enjoying prosperity, which is the direct effect of the new forward movement in the West, and the farther that movement extends—so long as it proceeds upon sound economic lines, and is not boomed by smart Eastern speculators and promoters who ought to be "furnishing low-priced farm labor"—it will still further stimulate Eastern producers and manufacturers. This country is an organism and the whole acts for every part.

We do not like to use the term "fool" with which our contemporary is so glib, but when a man becomes so insane that he protests against an effort to employ the scant agricultural possibilities of Alaska for the comfort of the brave people who go there to gather products for which the world stands in need, as a menace to American agriculture, the word fool seems strikingly appropriate. Our contemporaries would not think of belittling the "established farmers" of America by conjuring up a bogie rival in Alaska to affright them, were he not so far gone in blindness of prejudice and narrowness that he cannot see the ridiculousness of his own attitude. In his zeal for error he becomes an object for pity rather than for condemnation.

A SPLENDID EXHIBIT of the American agricultural experiment stations and their work is going forward for the Paris Exposition. It was made up in Washington of contributions of all the State stations, and is so extensive and so varied that the Frenchman is likely to be astonished at the fact that the great system which the exhibit indicates has been practically built up since the last Paris Exposition in 1889.

WE notice that in a grand auction offering of Herefords at Kansas City, April 25, our Nevada breeder, John Sparks, is to put some of his surplus stock on sale. Mr. Sparks is also making good local sales on this coast, and he will ere long have to cope with competitors of his own starting.

THE challenge of the Holstein-Friesian Association for a test of cows has practically been turned down by the associations of other dairy breeds and no competitive trial can be had. It seems that the authorities of the other breeds practically ignored the proposition.

QUERIES AND REPLIES.

Cutting Back at Planting.

To THE EDITOR:—I have just put out an apple orchard consisting of Newtown Pippin and Bellefleur yearling trees. They are straight shoots now, in height from 2½ to 4 feet. In making enquiries I find about one-half the people advocate cutting them back and the other half against doing so. The latter say the tree will do better if not cut; when it sprouts pinch back all the growth up to the branches you wish to form the tree; then in one or two years, if the tree forms properly, take out center if it needs to come out. They claim if you do cut off top there will be several shoots come out where the cut is, as the sap seems to rush to any cut. One of the parties who does not advocate cutting, and who has put out an orchard himself this year and has not cut it, is a Slavonian fruit packer here, and his theory is that by not cutting, but by keeping all growth off below where the branches are wanted, the tree will do better and grow faster.—APPLE PLANTER, Watsonville.

You can get good apple trees by either of the methods commended to you by your neighbors. One objection to not cutting back is that you are likely to have trees of very different height or length of trunk, and this is undesirable because of lack of uniformity, because it is inconvenient and costs more to handle fruit on high trees, and because long-trunked trees are more liable to sunburn and borers. For this reason we would cut all the trees back to a uniform height and then bring out the branches in the right places and distances apart, as was mentioned in this column last week. As for the excessive shoots which start from the upper buds when the young tree is cut back, they can be pinched out as they are seen and growth thrown into the shoots which you wish to save for branches. The removal of the center stem is largely a matter of taste; we prefer to remove it at first to save the tree from getting too thick in the center, and we would rather do that than to cut it out afterwards to thin out the tree, which would have been better had it not been allowed to get too thick. But the ruling idea in cutting back the stem at planting is to get uniformly low-headed trees, and that is an exceedingly important consideration.

Treatment of Palms.

To THE EDITOR:—Can you suggest some method of treatment for the ordinary fan palm, and for the Phoenix canariensis as well, that will tend to produce an upward and slender growth of the tree, instead of the low, bulky trunk with excessive girth so often seen? Will peeling the trunk produce the upward growth and stop the spreading?—J. H. WILLIAMS, Porterville.

Our taste runs so strongly toward a palm with a good thick stem that we have never given much attention to this question. The California fan palm can be thinned somewhat and given what seems to us a sickly look by continually cutting off the leaves below. Many of the Los Angeles palms have been ruined to our taste by such treatment. We are not sure how the Canary date will act under that treatment, but we presume it will have a somewhat similar effect. We believe in growing palms as nearly as they naturally grow as possible. If we desire a thin-stemmed fan palm we plant the Japanese fan palm *Chamaerops exelsa*, and for a thin-stemmed feathery-leaved palm we would plant an *Areca* or a *Seaforthia* if the place is light enough on the frost question.

Why do Dewberries and Blackberries "Peter Out"?

To THE EDITOR:—I got, some years ago, a few dewberry roots which bore for a year or two astonishingly, as I thought, and, to use a slang phrase, they "petered out," and although I used new ground, still I failed to get any berries worth mentioning. It is a mystery to me, and, let me say in this connection also, that blackberries here seemed to grow for a couple of years and bore very well and then they practically ceased bearing. I had supposed that some necessary element in the soil was exhausted, but when I changed the dewberry roots to new land and then they would not bear, I was still more at a loss. If you can give me any light on the matter it will be thankfully received.—NATHAN W. BLANCHARD, Santa Paula.

We are glad this question is asked because we cannot answer it to our full satisfaction. We have seen such cases which could not be explained on the ground that the plant was too old. Of course satisfactory bearing does cease when the roots become too old and a start of fresh plants is the proper recourse. But plants do fail before they ought to fail

and that is what we wish to hear about. We have an idea that neglect and drying out after fruiting is the cause in some cases. Who has looked deeply into this matter?

Almonds Dropping.

To THE EDITOR:—I would like information on growing almonds, pruning, picking, curing for market, etc., also what to do to keep them from blighting and falling off. I have 190 trees, six and seven years old from the time they were grafted or budded. They blossomed quite full last year and nuts formed till they were the size of large white beans, and then they fell off, only eighteen nuts maturing. They are of the Princess or Soft Shell variety.—READER, Douglas county, Oregon.

Full details about the growth of the almond and handling the nuts are given in our "California Fruits." The dropping of almonds is due to two causes—one is the frost, the other the lack of pollination. In California the greatest trouble has come from the first cause, and it is now conceded that places to grow almonds must be selected with great care. Where the trouble is due to lack of cross-pollination, the remedy is to graft over some of the trees to another variety, like Drake's Seedling, which is a good pollinizer, or to plant trees of such variety alongside.

Fertilizers for Orchard.

To THE EDITOR:—What is the best time to apply fertilizers for orchard trees, or can they be applied at any time with good results? I am told that Thomas slag (400 pounds) and muriate of potash (100 pounds) to the acre is a proper application for my land. What say you?—READER, San Jose.

The application is a proper one to give your trees—phosphates and potash—and it is a better time to apply these now than later. The slag could have been used earlier to good advantage; the potash is quite soluble and is best used after the heaviest rains of the season are over, as they may now be presumed to be. If you need a nitrate to stimulate wood growth, it can be used later, as the nitrate of soda, which is widely used now, is very readily dissolved and distributed deeply even with a light rain when the soil is already moist.

Snails or Slugs.

To THE EDITOR:—Can you tell me some remedy for slugs (snails)? They are destroying everything in my garden. I was advised to turn in the chickens, and did so, but they refuse the slugs with disgust.—COLLEGE PARK, San Jose.

If young chickens fail to eat snails, young ducks are not likely to refuse them. We have used both to advantage, and we have killed many with free use of air-slaked lime, but our best success lies in keeping the soil loose on top, and when this is done it will dry at the surface, so that snails cannot operate to their advantage. If the soil is allowed to become hard, it is a perfect parade ground for slugs. Whenever the soil becomes fit to stir after a rain, stir it and let the top dry. It is a good way to conserve moisture below and to discourage slugs above.

Climbing Roses.

To THE EDITOR:—What varieties of ever-blooming climbing roses are best? I would like dark red, white and any other colors that are sure bloomers. Also, where may I procure a book or paper on flower culture in California?—READER, Fair Oaks, Sacramento Co.

This question is open to the remarks we made last week about hedge roses: Each part of the State has those particularly adapted to it. Our preferences—for a dark red climber, James Sprunt; light red, Reine Olga de Wurtemberg; pink, Ellie Beauveleine; white, climbing Perle des Jardins and climbing Niphetos; yellow, Marechal Neil; apricot, Rene d'Or; deep yellow, William Allen Richardson. Other readers can tell us what they think about this list, and in that way we can please everybody, probably. There is no California book which covers exactly the field you have in mind, nor any journal devoted to the subject. Neither would pay for printing.

Brome Grass.

To THE EDITOR:—Is the brome grass all that is claimed for it according to the piece in the PACIFIC RURAL PRESS of February 24th? I would be thankful for a little information on the subject.—E. E. MORSE, Corning.

The Hungarian brome grass (*Bromus inermis*), as has been frequently stated in these columns, is one of

the very best grasses for arid lands, not only in California but in the interior of the country as well. It will maintain life in the root in spite of much heat and drouth, but there are plains and hillsides in California which are too dry and hot for it—or for any other known grass, for that matter.

THE new stock yards feed department at Chicago proposes to furnish meals at all hours to the cattle as they arrive, which is a merciful and, we presume, also a profitable thing to do.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 12, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

SACRAMENTO VALLEY.

Warm weather followed the rain of last week, and showers were frequent up to the 8th; some sections report heavy rainfall on the 7th and 8th. The precipitation was generally beneficial to all crops, and, though not needed in some localities, caused no damage, except in retarding farm and orchard work. Grain has never looked better at this season of the year, and has commenced to head out in some places; with normal conditions through the spring and summer, the crop will be far above the average. Feed on the ranges is excellent. Deciduous and citrus fruit trees continue to advance satisfactorily, and unusually good crops are expected. No damaging frosts have occurred. Almonds are nearly beyond danger, with prospects of a large yield. At Colfax the precipitation on the 7th was 3.01 inches; in Butte county, on the 7th and 8th, 1.64 inches, causing the Feather river to rise rapidly.

COAST AND BAY SECTION.

The temperature has averaged nearly normal during the week, and showers have been frequent in the northern portion. The storm of the 7th was the heaviest of the season in Sonoma county, 2.25 inches of rain having fallen on that date, and 2.67 from the 3rd to the 9th, causing rivers and creeks to rise rapidly, but no material damage was done. All crops were benefited by the rain and warm weather. In the bay and northern coast counties grain and hay are in the best condition, and large crops are probable. In the southern coast counties no rain has fallen since the 5th, but the rainfall of the preceding week was of immense benefit, and with normal spring rains good crops seem to be assured. Summer-fallowing has been resumed. Pasturage is abundant in all sections. Almonds and deciduous fruits are progressing favorably.

SAN JOAQUIN VALLEY.

The generous and much-needed rains which fell during the first part of the week in all sections were of great value to all growing crops, especially the late-sown grain. The days have been warm, with cool nights and foggy mornings, conditions very favorable for all growing crops. The late-sown grain, which was beginning to show the effects of the dry weather, is now growing rapidly. Both late and early-sown grain are looking fine. Green feed is abundant, and in some sections hay will soon be ready to cut. Fruit trees are in full bloom and almond trees are beginning to leaf out. No injurious frosts have occurred, and the prospects are favorable for large crops of all kinds of fruit. Ground too damp for summer-fallowing at present. Sheep are being moved to the bay counties and wool shipments have commenced. Hay shipments to Arizona from the upper portion of the valley are increasing. Farm work is well advanced.

SOUTHERN CALIFORNIA.

Warm weather has continued during the week, the temperature averaging considerably above normal, and no rain has fallen since the 5th. Heavy dews are reported in some localities. Further reports relative to the rain on the 4th and 5th show that the precipitation was well distributed over the section and greatly improved the condition of fruit trees, barley, late-sown wheat, hay and pasturage. In the elevated portions of the section good grain and hay crops are predicted, and in some districts it is reported that the early-sown grain was revived to such an extent that half a crop will be gathered, if more rain should fall within a short time. Citrus and deciduous orchards are in good condition, orange trees being in full blossom, and all deciduous fruits are advancing rapidly, with prospects of a large yield.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, March 14, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall to Same Date Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Minimum Temperature for the Week...	Maximum Temperature for the Week...
Eureka.....	1.18	43.15	24.94	33.37	48	72
Red Bluff.....	0.82	18.43	13.39	19.98	44	74
Sacramento.....	.98	15.57	7.95	15.50	48	72
San Francisco.....	.68	17.02	8.03	18.15	48	76
Fresno.....	.38	7.42	3.90	6.79	46	78
Independence.....	.28	2.42	1.15	1.15	33	78
San Luis Obispo.....	.18	14.81	7.15	14.83	44	84
Los Angeles.....	.08	5.55	2.98	13.92	44	90
San Diego.....	.00	3.12	3.73	7.88	50	80
Yuma.....	.00	0.76	1.34	2.66	42	96

STATE BOARD OF AGRICULTURE.

California Agriculture in 1899.

NUMBER II.

Report of the State Board of Agriculture, specially furnished for advanced publication in the PACIFIC RURAL PRESS.

FRESH DECIDUOUS FRUITS.

The great fruit crop of California is her special pride, and to tell the story of its abundance, its variety and its excellence, would require a volume. The treatment of this industry is the special province of the State Board of Horticulture, and we will but advert to it.

The deciduous fruit crop of 1899 was heavy and tables following will show that the Eastern shipment was the largest ever sent from California. This Eastern shipment is, however, out of proportion to the true volume of the crop, as a relatively small part was dried or canned, owing to the favorable prices paid for the fresh product. As a rule, good prices were realized for the crop of 1899, owing chiefly to the almost complete destruction of the Eastern crops by frosts.

The following tables show the number of carloads of fruit shipped out of California since 1895, the first table giving the carloads by varieties; the second giving the carloads sent to each of our various Eastern markets:

VARIETIES OF FRUIT.

	1895.	1896.	1897.	1898.	1899.
Pears.....	1,187	1,624	1,640	1,595	1,684
Peaches.....	1,289	976	1,316	1,103	2,625
Grapes.....	1,010	712	1,100	734	847
Plums.....	465	407	742	542	885
Apricots.....	162	172	177	123	90
Cherries.....	180	88	239	297	85
Apples.....	205	53	61	596	594
Quinces.....	13	8	24	1	19
Figs.....	.....	2	3	.....	.....
Nectarines.....	5	1	10	.....	2
Persimmons.....	.....	.....	2	1	1
Mixed.....	152	9	9	15	24
Cars not reported.....	.....	.....	.....	.....	117
Totals.....	4,568	4,052	5,323	5,007	6,924

DESTINATION OF CARS.

	1895.	1896.	1897.	1898.	1899.
New York.....	862	1,055	1,456	1,429	1,711
Chicago.....	1,473	1,007	1,410	1,203	1,060
Boston.....	279	471	543	536	710
Philadelphia.....	82	90	202	176	339
Minneapolis.....	124	147	180	167	247
Baltimore.....	37	5	16	16	67
Cincinnati.....	15	2	20	15	89
Kansas City.....	91	81	86	116	165
Montreal.....	44	81	98	96	128
New Orleans.....	75	85	81	62	128
Denver.....	148	136	98	229	272
St. Louis.....	78	68	59	27	115
St. Paul.....	109	91	121	67	125
Omaha.....	176	85	165	156	194
Cleveland.....	29	10	37	25	83
Pittsburg.....	26	25	40	47	137
Buffalo.....	15	7	15	5	34
Milwaukee.....	42	32	52	19	60
England.....	.....	42	58	42	132
Scotland.....	.....	.....	.....	.....	7
Germany.....	.....	.....	.....	.....	2
Minor points in Canada.....	.....	.....	.....	.....	52
United States.....	833	532	586	572	1,066
Mexico.....	.....	.....	.....	1	1
Totals.....	4,568	4,052	5,323	5,007	6,924

Cars shipped after July 1st, 1899, contained 2000 pounds more than former cars—equal to 484 cars—hence for comparing the number of cars with former years the 1899 shipments were 6924 plus 484 or 7408 cars.

The fruit business in California may safely be said to be in a healthy condition, but the growers have many problems to solve before it will be satisfactory. With our present acreage and the present development of our markets, should a full crop occur here contemporaneously with a full Eastern crop, we would find our markets glutted and our prices disastrous. Under present conditions the further planting of fruit trees does not appear advisable, except in special cases. The present energy of our growers should be directed towards extending our American and foreign markets and organizing at home for the better protection of our interests. Other activity should be directed towards improving the quality of our product, shipping it without deterioration, and curing and preserving it to the best advantage in the various forms calculated to give it the widest use and distribution. But the chief requirement is to introduce it more generally to consumers and to extend our markets. Further planting should wait upon this accomplishment.

GREEN FRUIT SHIPMENTS TO EUROPE.

In 1896 experimental shipments of green fruits to England were tried with promising results. Forty-two carloads were shipped there and sold that year. In 1897 fifty-eight carloads were sent, and in 1898 forty-two cars. In 1899 better success followed this venture, as shown in the table above. This

movement is at present in a most promising condition and may result in a very great relief to our domestic markets.

DRIED FRUITS.

[RAISINS AND PRUNES NOT INCLUDED.]

Although the fruit crop of 1899 was a comparatively large one, the product of dried fruit was small owing to a good demand for fresh fruit in the East and from canners at home. The following tables give the dried fruit product of California in pounds since 1893, the figures for 1899 being estimated:

Year.	Peaches.	Apricots.	Apples.	Pears.
1893.....	16,800,000	9,500,000	3,800,000	2,640,000
1894.....	30,540,000	28,750,000	5,850,000	6,530,000
1895.....	24,500,000	10,650,000	4,560,000	5,400,000
1896.....	16,450,000	6,750,000	2,350,000	9,650,000
1897.....	27,150,000	30,125,000	5,250,000	6,350,000
1898.....	10,960,000	8,240,000	3,520,000	6,620,000
1899.....	8,000,000	5,000,000	5,000,000	4,000,000

Year.	Plums.	Nectarines.	Dried Grapes.	Figs.
1893.....	1,530,000	780,000	4,850,000	890,000
1894.....	2,750,000	1,250,000	4,520,000	1,550,000
1895.....	4,500,000	1,325,000	4,250,000	2,750,000
1896.....	2,150,000	600,000	2,710,000	2,165,000
1897.....	3,250,000	285,000	3,450,000	3,250,000
1898.....	2,460,000	180,000	640,000	4,780,000
1899.....	2,500,000	150,000	2,500,000	2,000,000

The price of all dried fruits for 1899, with the exception of prunes, was good and the crop entered rapidly into consumption. In apricots, pears and probably peaches the supply was deficient, while the carry-over in other varieties will be small, leaving a clear field for the crop of 1900. The condition under which the producer has sold his dried fruit have not proven satisfactory and have resulted in a general discontent. Growers whose interests were common have sold against each other in markets they were mutually interested in sustaining. Consignments without proper regard to distribution broke markets; the producer had had no voice in fixing the price of his fruit, and in other ways he felt that he realized an unfair proportion of the sum paid for his fruit by the consumer. This has led to an effort to effect an organization of all the dried fruit interests to correct these evils. At a convention recently held this movement was organized and now only awaits the ratification of the growers. It is to be hoped that this plan will succeed, as it promises to increase the profits of the grower, whose interests more nearly concern the prosperity of the State. A great future awaits the proper management of this industry. The efforts of the growers or their organization should be to seek out new markets, to perfect their product, to pack it attractively and, above all, uniformly and honestly. The European market is opening up splendidly for our dried fruit. Our first shipments to that market were made but a few years since; the first heavy shipments, chiefly to Germany, were made in 1897, resulting from our splendid showing at the Hamburg Fair. Of the crop of 1899, up to January 1st, 1900, 1150 carloads of dried fruit had been sold in the European market and shipments are still going forward. The greatest care should be taken that fruit for this market, and in fact for all markets, should not have been excessively treated with sulphur, should be free from any suspicion of fruit insects or pests, and that the pack should be perfectly honest. United States Consul-General Mason, at Berlin, in a very recent report to the State Department, advanced sheets of which have been furnished us, presents this most forcibly, giving instances of dishonest packing which proved very injurious to the extension of our trade. This report should be read by every association and packer in the State.

One of the good works we look to see accomplished by an association is a provision for even grading and packing which will appeal to the confidence of the consumer. As we write this report the press announces that oppressive restrictions on our sales have been removed by the governments of Switzerland and Germany, which should greatly extend our sales in those countries.

DRIED PRUNES.

The French prune or other varieties of the prune of commerce is grown in all sections of California and in as fine quality as anywhere in the world. The growth of this industry has been most rapid, the crop of 1898 exceeding that of France, the home of that fruit.

The following table shows the increase in our production:

PRUNE PRODUCT OF CALIFORNIA FOR TEN YEARS.

Year.	Pounds.
1890.....	16,000,000
1891.....	27,500,000
1892.....	22,500,000
1893.....	52,180,000
1894.....	44,750,000
1895.....	64,750,000
1896.....	55,200,000
1897.....	97,780,000
1898.....	90,420,000
1899.....	96,500,000

Total for ten years.....567,580,000

As in cases of other dried fruit mentioned above, much dissatisfaction has existed among prune growers about the sales of their crops and many efforts

have been made looking toward their co-operation in the pricing and sale of their product. But all such attempts failed until the adverse conditions of 1899 drove them together. The prune crop of 1899 was short in almost every country in the world, including California, the only reason for her increased yield being the new acreage coming into bearing. In the face of this condition, and with a crop of a better quality, probably, than they had ever produced California growers found the price fixed for their crop lower than ever before. This moved them to the organization above spoken of, which was primarily in the interest of the prune growers. It is to be hoped that every prune grower in the State will join this movement, which promises much for this industry. If the reasonable hopes of this organization are realized prune growing will continue profitable but further planting should wait upon this result.

CANNED FRUITS.

The fruit pack of 1899 was the heaviest in the history of the industry. This was so notwithstanding extremely high prices had to be paid for the fresh fruit, and that a serious shortage of cans occurred all over the State in the very height of the packing season. The superiority of California canned fruit is now generally acknowledged and they find a ready market in many parts of the world. We still import some of the finer grades of jams, preserves, marmalades, sauces and the like, which certainly should not continue. We grow here at least as good material from which these articles are prepared as anywhere in the world, and our manufacturers should see that we do not, for example, import such articles as apricot and orange marmalade from England, where these fruits do not grow, to California, where they flourish. The growth of our foreign trade in canned fruits and vegetables is most encouraging. In 1894 we shipped 95,817 cases to England; in nine months of 1899 we shipped 492,380 cases there. Tariffs in other European markets obstruct the extension of our trade. The volume and growth of our fruit pack are shown in the following table:

CALIFORNIA CANNED FRUIT PACK.

Year.	Cases.
1890.....	1,495,300
1891.....	1,571,200
1892.....	1,602,370
1893.....	1,001,640
1894.....	1,528,815
1895.....	1,639,807
1896.....	1,602,446
1897.....	1,942,982
1898.....	2,085,166
1899 (estimated).....	3,000,000

Total in ten years.....17,469,726

In addition to this we packed in 1899 of tomatoes 561,000 cases, and of other vegetables 135,000 cases.

RAISINS.

The development, condition and future of this great industry has been so admirably reported to us by Mr. M. Theo. Kearney, President of the California Raisin Growers' Association, that we can not do better than present his statement as submitted. Mr. Kearney writes:

"Raisins have been produced to a limited extent in California for many years, but it was not until 1885 that the quantity produced made any impression on the market. Beginning with that year, the production of raisins in California was as follows:

Year.	Pounds.
1885.....	9,400,000
1886.....	14,000,000
1887.....	16,000,000
1888.....	19,000,000
1889.....	25,000,000
1890.....	38,000,000
1891.....	52,000,000
1892.....	57,000,000
1893.....	85,000,000
1894.....	103,000,000
1895.....	91,360,000
1896.....	68,250,000
1897.....	65,250,000
1898.....	70,000,000

"It will be seen that the production reached its maximum in 1894; from that time since the yield has materially diminished. This is due partly to an excessive production and to the panic of 1893, which has demoralized business as to greatly lessen the demand for raisins. The total acreage of raisin vineyards in California amounts to 59,000 acres, of which 320 acres are in the southern counties of Orange, Santa Ana, San Bernardino, Riverside and San Diego, 180 acres in the northern counties of Solano, Yolo and Sutter, and 54,000 in the central counties of Fresno, Kern, Kings, Tulare and Madera—about three-fourths of the latter acreage being in Fresno county.

"The varieties of grapevines used for the production of raisins are the Muscat of Alexandria and the Muscatel de Gordo Blanco; these two being equally desirable, there is no special effort made to select one over the other. The Muscat vine is peculiar in its respect, and that is that to produce the best result it requires a very rich soil and an ample supply of moisture. It is also found that while these vines can be made to grow on almost any kind of land, the soil best adapted to their growth is the reddish, sandy

mentary deposits which are found in considerable quantity in the neighborhood of Fresno. Climate has very much to do with the success of raisin growing. Ten or fifteen years ago raisin vineyards were planted in many parts of California, and in the northern and southern districts to a far greater extent than in the central districts; but experience has shown that the country around Fresno is peculiarly favored in the matter of climate, and the raisin growers there find that their crops mature and are ready to pick several weeks earlier than in the adjoining counties. This difference in time is of great importance, because it enables the grower to cure his crop in the sun and with much less risk of damage from early rains.

"The decrease in the yield noted above is caused by a large percentage of the raisin vines having been pulled up by the owners, owing to the unprofitable character of the industry. For five years prior to the panic of 1893 raisins were sold by the growers in the field at an average cost of 5 cents per pound; but from that time on the price decreased until in 1897 the price dropped to as low as $\frac{1}{4}$ cent per pound, and the farmer found it cheaper to feed his working horses with raisins than to feed them barley. Through all this depression, the farmers were so discouraged that in Fresno county, alone, 20,000 acres of raisin vineyards were uprooted. Much of this demoralization in prices was due to a system of shipping raisins on consignment to Eastern brokers. To put a stop to that practise and to place the industry on a paying basis, the farmers organized themselves into the Raisin Growers' Association, appointed a board of directors, and, having established a system of inspection of grades, fixed their own prices upon the product, and required payment before shipment—doing away entirely with the consignment business. The movement was an entire success the first year, and the result was an average increase in prices of raisins from $1\frac{1}{2}$ cents per pound to $2\frac{3}{4}$ cents per pound in 1898. The success of their efforts in 1898 induced them to reorganize again for 1899 and 1900, and, assisted by the fact of there being a short crop in 1899, amounting to only 52,000,000 pounds, they were enabled to advance their prices to an average of $4\frac{1}{2}$ cents per pound. It is presumed that the success they have met with in their organization will induce them to continue it indefinitely, and there will no doubt be a moderate increase in the planting of raisin vineyards. It should, however, be borne in mind that, owing to frosts, drought and unfavorable curing weather, the crops of the past three years have not been much over 60% of the average crop. If there should be a full crop the coming year, the probability is that that quantity would be all that would be required by our home market as at present developed, and, without a material reduction in prices, it is hardly to be expected that a foreign market can be secured for any surplus.

"Within the past two years the process for taking the seeds out of raisins by machinery has been introduced, which makes the article much more attractive to housekeepers. This process not only deprives the raisins of the seeds, but also preserves them, so that there is very little danger of their deteriorating in quality. Already there are eight or ten large seedling plants in operation in Fresno, having a capacity to seed and pack 1500 ten-ton carloads during the season, and it is thought that within a short time nearly all the raisins produced will be put through this process."

(TO BE CONTINUED.)

THE APIARY.

California Honey Interests.

A writer for Gleanings in Bee Culture, a prominent Eastern honey journal, gives a review of the apiary resources and development of California which will be interesting to many of our readers:

It was naturally supposable that Cuba and the other islands that have been thrown open to the enterprise of our people would be the magnet to draw beekeepers into new and untried fields; but it seems that, in spite of new domains and our dry seasons, California still has a magnetic influence, and as the aspects of the honey business are rapidly changing in this State it is no more than fair that we devote a little time and space to it.

THE HONEY PRODUCT.—I believe the boast has been made that California produces the largest honey crop of any State in the Union. I believe I have made some such remarks in the past myself.

We can estimate quite closely, perhaps better than any other State, as to the annual product. Our honey is shipped over a few transportation lines and all we have to do is to look into the books of said lines. When the grand total figures up to 300 carloads, and in addition to this a large home consumption, perhaps we are justified in our boast for largest production, and may be further pardoned if we sail our hats a little when we reflect upon the long trains of honey that are leaving our State. But this exuberance is all the result of a good season and we have to use

this qualifying term, for we have our poor as well as good seasons.

During the nine years I have been in southern California, four of them have been total failures in honey production, while two others have been a partial success, leaving three good years in nine. Therefore, taking the average production during these nine years, I have come to the conclusion that in a series of years California will make no better showing than some of the Eastern States.

A GREAT STATE.—For nearly 800 miles the western side of California is white with the spray of the Pacific ocean. Measure off 800 miles on the Atlantic side of the continent and it would include all the coast from Maine to Georgia. In area it equals the ten far Eastern States. Thus far the honey production in this vast area has been confined to a few favored localities, and there are wide stretches of country where a bee could not live; but the prospects are bright for these desert places becoming our most reliable honey districts.

The history of the bee industry in California is decidedly interesting and shows many marked changes in the area of production, and those changes so favorably begun will go along with rapid strides. The production of honey in California commenced in the Sacramento valley, in the northern portion of the State. As the resources of the State became more generally known it was found that the southern end was far the best for honey, both in quality and quantity, and in that portion the industry has reached its greatest development. The honey produced in the seven southernmost counties will ever hold the reputation gained for quality, for in no portion of the State is there the amount of various sages that are found here. While the valleys have been put under cultivation and the sages destroyed, the canyons and mountain sides are still its home and there will always be very good pasturage, for the land can be used for no other purpose.

It is in this portion of the State where those phenomenally large yields have been produced, but we can refer to them only as phenomenal, for they seldom occur twice in the same locality. These phenomenal yields have always been within the sage belt and from that source, and it is safe to say that in the production of quantities of pure sage honey California has seen its best days—but not its best days in the production of honey, mind you. California has a population of a little over 1,000,000, while the Eastern States of the same area have 16,000,000. It is a foregone conclusion that the waste places in California will rapidly fill up with people, bringing changes in the products of the soil and more of a diversity in the honey resources and the quality of the honey.

THE NEWER HONEY REGIONS.—That the honey resources of California are changing and will increase to greater proportions than ever can be easily demonstrated in central California. In this portion of the State, where a few years ago the ground was so barren that upon hundreds of square miles a bee could not live, there are now thriving farms and thousands of acres of alfalfa. Irrigation has made this great change. This area of alfalfa is now confined in a great measure to locations not a great distance from the railroads. Outside of this area are thousands of square miles yet to be populated and brought under cultivation, and it is safe to say that alfalfa will be one of the principal crops.

We never hear of phenomenally large yields of honey in central California, but they are blessed with something better—no total failures. The honey yield fluctuates more or less, as it does in all locations, but there is a reasonably sure income from the apiary every year. The carloads of honey from central California, which are already numerous, will steadily increase. In the eastern portion of the middle of the State we find Owens River valley, not of great size. It is hemmed in by immense mountains and here the beekeeper produces alfalfa honey of the finest quality. Owing to location or some other cause the honey is of lighter shade than honey from the same source in other portions of the State.

The development of the honey resources in northern California has not kept up with the development in the south. It is a mountainous country, and in those portions where honey can be produced the cost of transportation to market eats too much into the profits to make it a paying business at the present prices of honey. It is safe to say that there is an area in northern California equal to the area of New York State where there is not a carload of honey shipped, and where it is produced it is sold in the limited home market. There is a future, however, for northern California honey production. With more and competing lines of transportation, more settlement of waste places and more alfalfa, carloads will begin to move out. Many of our prominent beekeepers, even in southern California, see in alfalfa the great and permanent honey plant of the future.

This great forage plant is in direct accord with the interests of every agricultural community. Alfalfa first, cattle next, then the flowing of milk and honey, typical of the highest prosperity of a State.

California is justly noted for its immense fruit industry and much has been said about this source of honey. However, it cuts but a small figure. The time of bloom is of short duration and the secretion of honey not abundant. The orange bloom, where the

trees are abundant, gives a fair surplus, but it would not pay for the beekeeper to depend wholly upon that source alone for his living.

Taking it all in all, the bee-keeping industry of California has a brilliant future, and all the present members of the fraternity have to do is to stick to the business and hasten the day of great prosperity.

THE VINEYARD.

Resistant Vines in California.

From a paper read by H. A. BRAINARD at the University Farmer's Institute at San Jose.

In France it was early discovered that the phylloxera not only weakened the vine by sucking the sap from the roots, but that the bite of the insect caused a corroding, cancerous spot upon the surface of the root, which more than anything else led to its final destruction. It was also discovered that certain wild American vines did not thus yield to the attack of phylloxera, and that these characteristic cancerous spots were not produced by their bite. American vines were imported, planted and grafted, and restoration there has been going on these many years. It was also discovered, in the course of propagating these American vines, that some individuals grew more vigorously than others and made better roots for grafting. Selection was therefore made and these better vines were propagated from to secure better grafting stock. The vines used in France were generally the Riparia species, secured from the river banks of Missouri, and the Rupestris, a native of dryer ground. Of the improved selections thus made and propagated in France, the California Experiment Station has made importations, as have our own progressive vineyardists, Messrs. Henry Lefranc and Paul Masson, and John Rock, the enterprising manager of the California Nursery, at Niles. Of these the Riparia Gloire de Montpellier and R. Grande Gloire have been favorites of the Riparia class, and Rupestris St. Georges, R. Mission, R. Metallea, R. Robusta and some others, and, like the original species, the Riparia are the best adapted to moist land and the Rupestris to dry locations.

Where vines have been grafted on Riparia stocks, in suitable locations, they have been just as fruitful, and even more so than upon their own roots. Vines grafted upon the common, unselected Rupestris have not given entire satisfaction in bearing, even in locations best adapted to Rupestris. Experiments in bearing have not been long enough in progress with the improved Riparia and Rupestris stocks to determine definitely this point. Both Riparia and Rupestris grow readily from cuttings and take the graft as well as any. Cuttings may be grafted with care during the winter, packed away in damp moss to callus, and grow quite readily when planted, thus saving much time in grafting. Such bench-grafted cuttings have been imported from France, and have grown well after being planted here. A machine has been devised which makes very perfect grafts. These improved Riparia and Rupestris cuttings can be obtained of nurserymen in France, where great care is taken in selecting sizes by calliper, with graded prices according to size. The California Nursery Company has also limited amounts of vines for sale.

AMERICAN EXPERIMENTS.—While these experiments have been going on in France, further experiments have been going on in America; not entirely with the idea of producing improved resistant vines, but with the object of securing better table and wine grapes to plant in the Southern and Gulf States, on the other side of the Rocky mountains. The basis of these experiments has been the native grapes of the South, particularly Texas. There are several wild grapes there, the Post Oak, the Mustang and several others. All are resistant, for phylloxera is native there and non-resistant vines cannot grow at all. Those most resistant have been found very difficult to grow from cuttings. These have been hybridized with vines which grow easily from cuttings, and which graft easily, and which bear edible fruit—for it must be understood that the Riparia and Rupestris do not bear very good fruit. These experiments are not yet complete, but a race, in fact several races of hybrid vines are coming into existence, native in the dry climate and soil of Texas and the South, all of which are resistant and which seem to have better rooting qualities and a much better prospect of good bearing when grafted than the Rupestris.

IN CALIFORNIA.—Here in California cuttings and vines of many of these new hybrids have been in experiment, mainly by Mr. Wm. Pfeffer, of our own county. He has proven their easy growth from cuttings. He has proven their good grafting qualities, but sufficient time has not elapsed to satisfactorily prove their good bearing qualities after grafting. So far as observed the bearing has been all that could be desired, and in the matter of striking strong roots deep down into the hard, dry soil and vigorous growth, the matter has been already decided in their favor.

These experiments here had a still further aim, and that is to secure a race of grapes which shall of

themselves be good enough for use as wine grapes and for the table without grafting. This is a more difficult problem, and one which will require years to accomplish, for several reasons. These grapes require different pruning from the Vinifera, or European grape. It is not yet settled whether they will bear as uniformly and as largely as the Vinifera. All these grapes have a different taste and flavor from the Vinifera; not necessarily inferior, but different; and the habits and tastes of people who have been accustomed to the European grape and vine must be overcome and educated. Mr. Pfeffer has made wine from a dozen varieties of these direct bearers. The wine has been sound, keeps well, and Mr. Pfeffer says it is even more agreeable as a beverage than most of the ordinary clarets of California.

Nearly every one of these has been found to be good grafting stock; and for the reasons that they are native of a country nearer to California in conditions of soil and climate than the native habitat of the Riparia and Rupestris and that they have strong, deeply-striking roots, with little or no tendency to sucker, which is quite a pronounced quality in the Rupestris, we believe that in this class of vines we shall find the true, best solution of restoring our vineyards.

Some of the best fruited of the American grapes are not resistant, belonging, some of them, to the Labrusca family; and these, if grown in California, must be put upon thoroughly resistant roots. These are the Isabella, the Pierce, the Catawba, the Delaware and Diana.

Some of the names of the new hybrid grapes, which we have spoken of as a class, are Manito, Aloka, W. B. Munson, Vin Rouge, Marguerite, Neva Munson, Excellente, Big Hope, Enfaute, Pukwana.

It was at first supposed that the native California vine, Vitis Californica, was resistant, but it has been found to be only slightly so and not advisable to plant.

We have not spoken of Lenoir, the Herbeumont, Cunningham and several other kinds of grapes which have done very well as resistant stocks and which have their advocates in certain locations.

The Riparia and Rupestris improved vines are now most available to those who must plant at once, although the Champini and Solonis, of the Texas varieties, can be secured; but we believe that the true solution of the resistant vine problem lies in the hybrids we have spoken of and which, with reasonable care and enterprise, can be propagated and made available in sufficient quantity for the use of every one, in the course of a very few years.

The inroads of the phylloxera are so gradual that there is time, after its discovery, to begin the work of securing stocks. To those who have no phylloxera and those districts where it has not yet made its appearance, we would give a word of caution. Phylloxera is very apt to be introduced in introducing resistant vines—not necessarily so if proper care is taken not to introduce by means of rooted vines, but by cuttings only. But speaking from experience in the past, the pest has many times been introduced in this way.

THE OUTLOOK.—Viticulture has every prospect in its favor as a profitable business. Production will undoubtedly decrease for several years, and with decreased production an increased price for wine can hardly be kept down. Restoration will be gradual and for a time will hardly keep pace with destruction. With this state of affairs co-operation in selling wine will hardly be possible, but none the less desirable, and if wine producers will unite on the strong lines the raisin branch has adopted, their business need never again sink into the depths from which it seems now temporarily emerging.

AGRICULTURAL SCIENCE.

Agricultural Education.

TO THE EDITOR:—I am just in receipt of a copy of the PACIFIC RURAL PRESS, of date March 3rd, and read with much interest your able editorial on agricultural education. This article takes exactly the right grounds and treats of a subject which can not be too much discussed nor too strenuously urged. You will note in my report a heading, "Agricultural Education," which treats to some extent on this subject, but does not go to the extent of your editorial. [This is the report which we are now printing from week to week.—Ed.] I discussed this question quite fully in a paper which I recently prepared and which was read before the Farmers' Congress at Salem, Or., Feb. 8th, 1900. In that paper I took strong grounds as to the supreme importance of a more extensive, a more varied and a more general agricultural education. I have always been a strong advocate of agricultural fairs and exhibitions, on the grounds: that they instructed the persons who attended them; that they stimulated them to a greater exertion; that they corrected their tastes, and illustrated to them, practically, the highest ideals toward which they should strive. In sending a copy of my Oregon paper to the editor of the Pacific Homestead, Salem, I touched upon another phase of this question, as follows:

"I hope the Farmers' Congress proves a great

success. A higher class of agricultural education is the hope of the nation. The problems presented to the farmer are daily becoming more difficult, and upon their proper solution depends the prosperity of our country. Outside of the question of the mere production of wealth, there is a social and racial question of supreme importance. If we educate our agricultural classes, we can make life upon the farm more pleasant and maintain there a greater population. Such a population has always been and always will be the strength of the nation which is so fortunate as to possess it. These people grow our wealth, are independent, devoted to good government, and they are, as a class, devoted to the arts of peace. In this way a national development along moral, physical and intellectual lines is promoted, and the strength of the nation is not sapped by constant additions to the wasting ranks of the cities, or in recruiting armies to be sacrificed on the battlefield."

Your editorial is in line with the recommendations made by Secretary of Agriculture Wilson, in his recent report to the President, where he urges elementary instruction in the sciences that relate to agriculture and the introduction of nature study in our common schools.

The Secretary says: "When we consider that half the people of the United States are occupied in producing from the soil directly; that about three-fourths of our exports to foreign countries come from the soil, and that the \$600,000,000 balance of trade coming to the United States during each of the last two fiscal years have been, to a great extent, the price of farm products, it is somewhat remarkable that so very little attention is given to the education of half the people of the nation and preparation for their future life-work."

I hope you will give this most important subject further editorial attention in line with your recent able article.

PETER J. SHIELDS,

Secretary State Board of Agriculture.

THE DAIRY.

Treatment of Bloat.

Though the facts which a correspondent of the Napa Register furnishes are not new, they may not have caught the attention of all readers and are worth repeating.

Because of the abundant growth of grass, farmers and others who have stock on pasture need to be on their guard. These remarks apply especially to cows and heifers. In the first place, there is some danger of hoven, or bloating, caused by eating too much rank-growing clover, alfalfa or other grasses, especially when the dew has not disappeared.

It is not an uncommon occurrence for cows or younger cattle to show bloat very suddenly. If the case is a severe one, the knife must be quickly used, if the animal is to be saved. This is in order to relieve the stomach, which lies on the left side under the short ribs, of fast accumulating gas. Sometimes a very few minutes tells the story.

Mr. Mallet, who years ago had a meat market in Napa, always had handy for such emergencies a piece of common garden hose, about 5 feet long, the end of which was covered with thin sheet lead, perforated. This was inserted in the cow's throat and then pushed down into the stomach. Through it the gases quickly made their escape.

An excellent contrivance, often used when bloating takes place, is a short, round stick about the size of a fork handle. This is inserted in the mouth of the cow and tied to her horns by two short ropes. This causes the animal to keep her mouth open, and while she endeavors to get rid of the stick the gas escapes. Keep her moving about the lot or corral while thus treated, and in five or ten minutes the trouble will be over. Afterwards keep the cow off grass for a day or so, feeding lightly. This treatment may save a valuable animal.

Another trouble, so often met with at this season of the year, is milk fever, occurring from one day to a week after calving. If the cow has been on first-class pasture for some time previous to calving, there is great danger that she will become too fat. On the other hand, one may fall into the error of having the cow in such poor condition that she will not have the strength to pull through this trying ordeal. The result in either case will often be identical—the cow dies. This is often the result of sheer carelessness or thoughtlessness. It pays to take extra care of cows at this critical period, exercising common sense.

If the loss to farmers and others in this way in this valley, annually, does not amount to \$1000, it is not very far from that figure. Within the last month at least three cows have died of milk fever within a radius of half a mile from Trancas. Not one was worth less than \$50. Many more will die from the same cause this spring. Nine times out of ten these losses are due to carelessness or lack of knowledge.

Stopped at the Threshold.

TO THE EDITOR:—In your paper of Feb. 10th I read with interest an article on "Care of Milk for the Creamery." From experience, I know that much depends on the men who weigh in the milk to cream-

eries. Many years ago I had a creamery in Scandinavia, and learned that the man (I had a woman) that weighs in the milk must be in possession of good smelling organs. The first test I gave the milk I smelt it. How they do here, I don't know. A man who uses tobacco in any form can never judge milk. Give a buttermaker bad milk and he can not make good butter. You may judge if this is worth knowing or not.

A. M. NELSON.

Eureka.

THE FIELD.

The Broom Corn Product.

There has been a high range of prices for broom corn at the East, and the report of it has awakened the thought in some California minds that this crop might have some chance beyond the small amount needed for broom making on this coast. In view of this discussion, it is interesting to give from the Breeders' Gazette a general review of the conditions affecting this crop.

REQUIREMENTS.—To produce a ton of broom corn under fair conditions requires about three acres of land. The cost of production under the best of conditions is \$50 per ton; the average selling price is about \$70 per ton, though it has sold as low as \$30. This is a crop requiring an immense force at harvesting, a threshing gang numbering not less than twenty, and the harvesting season attracts to the community as laborers or as camp followers a swarm of most undesirable characters. The business requires a special outfit of tools and sheds costing \$800 to \$1000, which are of little or no value for other purposes. The crop is a precarious one that may be ruined by a few days of bad weather, and its successful growth and harvesting require a high degree of knowledge and special skill.

SUPPLY.—The world's consumption of brush, according to the best authorities, is about 30,000 tons, and there can be no sudden increase, because it is used but for one purpose. This 30,000 tons is produced on about 112,000 acres, or less than five townships of land. Two-thirds of the broom corn of the world is grown in four counties in Illinois—Douglas, Coles, Moultrie and Edgar—with Arcola as the most important shipping point. In favorable years these counties have produced 28,000 tons, or practically the world's supply. The territory and the men already engaged in broom-corn growing could easily double the present production if warranted by the demand.

DANGER OF A DROP IN VALUE.—The present price is the result neither of an unprecedented demand nor of a short crop, but of a slight increase in activity in a limited industry, giving rise to peculiar market conditions. The grower has not realized these prices, nor could they have been established until after the crop was practically out of the hands of the producer. Attracted by large quotations, many novices will plant extensively the coming year. The result will be an enormous over-production of brush, much of which will be of inferior grade. It is and will always remain a little industry, because the demand is not only limited, but small. Isolated individuals and those remote from recognized methods are at a serious disadvantage. This is not a favorable time to embark in the business; and whoever feels impelled to undertake it should first visit the broom-corn district and fully acquaint himself with the particulars of the industry.

HORTICULTURE.

Tar-Resin Compound for Tree Wounds.

TO THE EDITOR:—In printing Mr. Daniel Snively's letter last week, a printer's error made him speak of \$2 a gallon. What he wrote was "2 lbs. of resin" to a gallon of coal tar.

Coal tar by the barrel is worth about 7½¢ per gallon at present, and this is rather a higher price than usual. It appears to be in increased demand as being a source of picric acid, which enters largely into the manufacture of the explosive lyddite, so frequently mentioned by South African war correspondents.

Even at 10 cents a gallon, (retail price in Monterey, at Del Monte Gas Works), and with three pounds of resin to the gallon—about the proportion I am using—it makes a cheap paint.

I would add that Mr. Snively's experience is mainly on peaches, apricots or prunes. I do not find my apples or pears show any of the blisters of which he speaks under the paint. EDWARD BERWICK.

Monterey, March 11.

Look Out for Frost.

TO THE EDITOR:—When should we plant the Soja bean and the new Velvet bean? Are they easily killed by frost like other beans? And tosinite—is it affected by frost like corn?—J. H. O., Madera Co.

All the plants you mention are tender and should not be above ground until danger of frost is over.

Agricultural Review.

ALAMEDA.

GOOD WINTER RANGE.—Livermore Herald, March 10: Livermore valley is becoming popular with Nevada stockmen, who wish to get their stock away from severe winters and have them fattened within easy reach of the San Francisco market. Several hundred were brought here last month, and another shipment of 200 arrived Tuesday and have been put on pasture in the valley.

BUTTE.

SEASON FAVORABLE FOR HEMP.—Gridley Herald, March 10: The season has opened very favorably for the hemp men. The soil is in good shape and abundant moisture is present to give seed a good start. John Heaney will commence sowing immediately and will plant 250 acres.

FRESNO.

GRAIN HEADING EARLY.—Sanger Herald, March 10: That grain in this vicinity is heading out much earlier than usual at this season of the year is evidenced by several bunches of barley that were left on our table by C. H. Padgett. The stalks were gathered in Mr. Williams' field near Del Rey. They are about 3 feet high and the heads doubtless would have matured within a few weeks. These are not isolated stalks, but there are acres of similar grain in that locality.

SHEEP BUSINESS.—If there is one industry more than another that has been benefited by the mild weather of the past few months it is the sheep industry. Arch Burns informs us that the past winter has been propitious for lambing, and he estimates the average increase among his flocks at 110%. Buyers are offering \$3 a head for one-year-old wethers. There is an abundance of green feed and sheep around Sanger never looked better. Sheep men say frequent rains and abundance of grass tend to keep the wool much cleaner than in other years, and it will command a much better price in consequence. At this time last year sheep were eking out scanty sustenance from what vegetation was to be found on the dry, burnt plains; sand storms were of frequent occurrence; when the sheep laid down to rest it was on the dusty ground, and their coats of wool grew heavy with dirt, while no rains came to cleanse them.

HUMBOLDT.

DAIRY INSPECTOR APPOINTED.—Eureka Standard, March 7: William Vanderbilt, general agent of the State Dairy Bureau, has issued to Dr. E. Backenstose a certificate of appointment as assistant agent of the bureau and inspector for District No. 11, which comprises the counties of Humboldt, Trinity and Del Norte. The duties of inspector are "the inspection of dairies, factories of dairy products, and of dairy products as to their sanitary condition, and as to the health of stock, and to prevent the sale of milk drawn from diseased animals to the people of this State, and to prevent the spread of infectious and contagious diseases common to stock." Dr. Backenstose will enter upon his duties as soon as his appointment has been officially approved by the board.

LOS ANGELES.

IRRIGATION COMPANY MEETING.—Pomona Progress, March 8: At the annual meeting of the stockholders of the irrigation company of Pomona the former board of directors, consisting of the following, was re-elected: G. Mirande, A. G. Whiting, M. C. Allen, Franklin Cogswell and Hervey J. Nichols.

MENDOCINO.

HEAVY LOSS OF LAMBS.—Covelo, March 6: The severe cold rainstorm which has been raging in northern Mendocino the past four days is detrimental to the interests of the sheep men, who are suffering a heavy loss of lambs. The storm shows no indication of breaking. Late plowing is delayed. Grain that is in is doing well. The precipitation for the past twenty-four hours is 2.81 inches.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

MONTEREY.

STOCK RAISERS' ASSOCIATION.—Salinas, March 5: The Monterey Stock Raisers' Association held a meeting, with President J. R. Hebbon in the chair. Members representing 75,000 head of cattle were present. A board of directors, consisting of nineteen members, representing the different sections of the county, was chosen, and the annual election of officers followed. The result was as follows: President, J. H. Hebbon; vice-president, S. N. Matthews; treasurer, H. E. Abbott; secretary, B. V. Sargent.

ORANGE.

CROP CONDITIONS.—Santa Ana Blade, March 9: The country is safe, for the conditions have changed within the last twenty-four hours to make all the difference between a crop and no crop at all. Farmers throughout the country are feeling much encouraged, for this rain will most likely be followed by more in this month, and, if it should be, there will be a good hay crop and a considerable quantity of grain. This is the conservative estimate of the present outlook, although many say that should we have a fair amount of rain from now on until the middle of April the crop will be the greatest of any known in the past ten years.

SACRAMENTO.

BELGIAN HARE EXHIBITION.—Sacramento, March 7: It has been decided to give, in connection with the State Fair, a Belgian Hare Show, at which breeders from all over the State and elsewhere will exhibit. This will be the first show of edible hares in the northern portion of the State, and is expected to attract a great deal of attention. The rapidity with which the interest in the breeding of edible hares has spread has convinced the members of the State Board of Agriculture that it is destined to become an important State industry.

SAN BERNARDINO.

ARTICLES OF INCORPORATION FILED.—Redlands Citigraph, March 10: Articles of incorporation of the East Barton Water Co. have been filed; place of business, Redlands. Directors—Wm. McIntosh, W. J. Melville, W. H. Ellsworth, S. A. Grover and W. T. Leedom. Capital stock, \$1650; subscribed \$675. There were also filed articles of incorporation of the Eastborne Well Co. The directors are Geo. H. Gowland, L. N. Stewart, E. Walden, A. A. Henry and F. G. Feraud. The capital stock is \$3000, of which \$1900 has been subscribed.

COST OF PUMPING WATER.—At a recent meeting of the Highgrove Horticultural Club, John Haight furnished a paper on pumping water, with figures of cost, taken from actual experience. With a 28 H. P. gas engine raising 60 inches of water to a height of 90 to 100 feet, with an eight quadruple pump, using distillate for explosive, the cost of one day's run stands as follows: Fifty gallons distillate at 12 cents per gallon, \$6; lubricating oil, 35 cents; wages of man, \$3. Total, \$9.35. This is a cost of 15½ cents per inch per day.

SAN JOAQUIN.

PREDICTS BIG CROPS.—Lodi Sentinel, March 10: Glowing reports come in from all the surrounding country as to the condition of crops. Wheat is coming up, the late sown sprouting and from now on will grow very fast. Summer-fallow is healthy and completely covers the ground. Barley is flourishing and promises big things. The beet men are happy; the rain put the ground into condition for sowing seed and give it a good start. The experience of the last two years has not dismayed the beet men. They say that under normal conditions this section will raise good beets and no crop will give such large returns. Vines are looking well and are beginning to push out leaves. Activity is apparent among vineyardists and many new vineyards are being set out. All kinds of fruit look well. Said a prominent orchardist: "I have the best prospect this year I have ever seen in this vicinity." All crops on the West Side are well advanced and residents of that section say that the largest crop for years will be harvested. The islands, also, are in the line of big crops.

ISLAND CROPS ADVANCED.—Stockton Mail, March 8: Wherever grain was sown it presents a fine appearance. There is a large acreage of barley in the county, as many farmers sowed that cereal after it was too late to put in wheat. The popularity of San Joaquin county barley for exporting has made it almost as profitable as wheat, and many farmers made more money than their neighbors who raised wheat. Crops are further advanced on the islands than in any other part of the county. In many places herds of sheep have been pastured on the barley fields to keep the grain from growing too fast. On Tyler island there is a field of barley on which several hundred sheep have been feeding for some time, but the

barley is growing so rapidly that the owner has been compelled to cut down with a mower the grain near the banks of the sloughs, where it grows most rapidly. After a short time the sheep will be taken away and the grain will be allowed to mature. Planting potatoes has not yet begun, but vast areas of ground are being plowed. On Tyler island there will be about 6000 acres in one potato patch. On Victoria island there will be a large acreage, and several new islands and reclamation districts will be planted for the first time this year. The present weather is of untold benefit to the fruit men. When almond, peach and apricot trees began to bloom several weeks ago orchardists trembled for fear the unusually early blossoms would be caught by frost. It is not yet too late for destructive frosts, but as the weeks slip by and the weather continues mild the fruit growers begin to recover their courage and have confidence that the fruit crop will not only be unusually early but of unusual size.

SANTA CLARA.

SARATOGA BLOSSOM FESTIVAL.—There will be held at Saratoga on March 20th a Blossom Festival. A card announces that, besides furnishing a good dinner, speeches, music, athletics, games and a glad merrymaking will be provided. The committee consists of Dr. F. S. Lowell, E. S. Williams, E. J. Lawrence, Geo. O. Kinney and John McElroy.

BARNGROVER, HULL & CO. INCORPORATED.—San Jose Mercury, March 8: Articles of incorporation of Barngrover, Hull & Co. have been filed. The purposes are declared to be manufacturing agricultural machinery, orchard and farm supplies. The capital stock is \$25,000, divided into 1000 shares. The amount of the capital stock actually subscribed is \$9200, as follows: H. M. Barngrover, \$4000; B. D. Hull, \$3100; G. H. Lisle, \$1550; George E. Hyde, \$250; H. H. Kooser, \$300. The persons named are the directors for the first year.

FRUIT OUTLOOK.—Mercury, March 12: The weather at Campbell the past week has been very favorable for farmers and fruit growers. The rain, in addition to giving the soil a good soaking, has started the creeks running again to such an extent that the irrigation ditches have been taxed to their fullest capacity. The outlook is most favorable for a fine crop of fruit of all kinds.

SHASTA.

SHIPPING MULES.—Anderson Valley News, March 10: Jas. Snell, superintendent of the Cox & Clark ranch in Shasta and Lassen counties, has been buying and shipping mules to the Sandwich islands. In all he has shipped about 1000 head and now has another shipment awaiting cars.

SOLANO.

EXCELLENT FEED.—Vacaville Reporter, March 10: The growth of grass and clover is unprecedented, not only in the fields and along the highways, but in the hills and natural pastures. Henry Seaman says that in the many years he has lived here he has never seen such feed as his range affords. The wild clover is two feet long and oats are waist high. Feed never was so plentiful before at this time of the year. Wheat is as well advanced in places as it commonly is late in April. Grain crops promise to be very large.

SUTTER.

FRUIT GROWERS ORGANIZE.—Yuba City Farmer: At an enthusiastic meeting of fruit raisers the Feather River Fruit Growers' Association was formed with the following officers: Pres., S. J. Stabler; Sec'y, W. H. Raub, Yuba City; Vice-presidents, A. Moncure and G. W. Hutchins, Yuba county; A. D. Cutts and Geo. Ditzler, Butte county; L. A. Walton and J. B. Wilkie, Sutter county.

TEHAMA.

VINEYARD SOLD.—Corning, March 10: An important transaction took place in Corning this week. The well-known Aitkin vineyard, containing forty-one acres, was sold to an Eastern syndicate for \$12,300, or \$300 per acre. The vineyard adjoins Corning on the south and contains only the choicest variety of grapes. Last year the product was shipped to Denver, where it brought a good price. The syndicate will make many improvements upon its new purchase. The vineyard is several miles west of the famous Stanford vineyard.

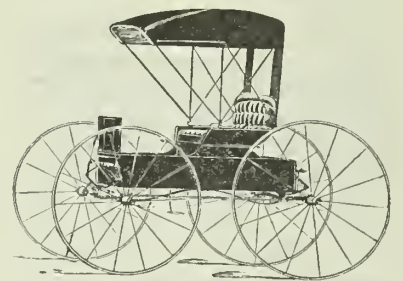
YOLO.

BELGIAN HARE BUSINESS.—Woodland Mail: The Belgian hare craze has struck Woodland in full force. Herb Coil, Will Porter and Dr. Grant received the first consignment Friday.

YUBA.

HOP VINES AS FERTILIZER.—Wheatland Four Corners, March 10: Horst Bros. have received a large cutting machine for grinding up dry hop vines. Heretofore these have been raked up and burned. Horst Bros. conceived the idea of chopping them up into small particles and distributing them over the hop land as fertilizer.

SOME DEALERS SAY COLUMBUS BUGGY CO.'S VEHICLES



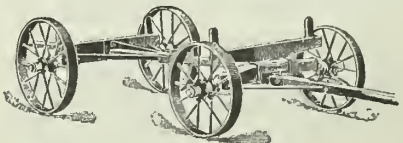
Are too high in price to admit of as much profit as the cheaper grades usually handled by agricultural implement dealers. A cheap vehicle costs just as much freight from the East as a good one, thus you get but little value for your money after paying three profits and freight.

If Columbus Buggy Co.'s vehicles are not on sale in your vicinity please write to the

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Bean and Flax Thresher in Use.

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MR. HANTICLER.—It's no use scratching over this straw, Biddy, it was threshed by a Minnesota Chief.

A full line of Separator, Engine and Horse-Power Extras always in stock.
Agents for Bay City Iron Works Straw-Burning Engines, mounted on Fischer's Pat. Taper Bolters.

THE HOME CIRCLE.

Each in All.

Little things, in the field, you red-cloaked clown,
On thee, from the hill-top looking down;
And the heifer that lows on the upland farm,
Far heard, lows not thine ear to charm;
The sexton, tolling the bell at noon,
Dreams not that great Napoleon
Stops his horse and lists with delight,
As his files sweep round yon distant height;
Nor knowest thou what argument
Thy life to thy neighbor's creed hath lent;
All are needed by each one—
Nothing is fair or good alone.

I caught the linnet's note from Heaven,
Singing at dawn on the alder bough;
I brought him home in his nest at even—
Ho sings the song, but it pleases not now,
For I did not bring home the river and sky.
He sang to my ear—they sang to my eye.

The delicate shell lay on the shore,
The bubbles of the latest wave
Fresh pearls to their emerald gave;
And the bellowing of the savage sea
Greeted their safe escape to me.
I wiped away the weeds and foam,
And fetched my sea-born treasures home;
But the poor, unsightly, noisome things
Had left their beauty on the shore.
With the sun and the sand and the wild uproar,

Nor rose, nor stream, nor bird is fair,
Their concord is beyond compare.

—Ralph Waldo Emerson.

One Side of the Argument.

"I swan, I dunno know how some folks git along, havin' as little sense as they do an' squanderin' that mostly in quarrelin' with other people because they don't agree with them in doctrine. No, I thank you; I'll just keep my shawl on, 'cause we're makin' soap to our house to-day an' I must hurry home. I'm that full of all this row between the Baptists an' the Methodists that I just had to run in an' tell you about it. I'm no spreader of evil stories an' such an' every one in the neighborhood knows that I mind my own business first, last an' all the time. Guess if I didn't, we wouldn't have a roof over our heads, John Henry being natcherly shiftless, which he gits from his mother's folks, the Wigginses. They ain't my kind of people an' never was. About the Baptists an' Methodists? I'm that full of it I dunno where to begin. When the Baptists moved into their church they engaged Mr. Bass. He may be a sincere man, but somehow I misdoubted him from the first.

"John Henry," said I, when I see Mr. Bass with his side whiskers, "I never knew no good of a man with side whiskers yet. The Lord never intended a man to drape the sides of his face in that fashion. You remember that lightnin' rod agent, that nearly put a mortgage on this roof that I've worked so hard for, had side whiskers? Now, the Baptists have gone an' hired a minister with side whiskers, an' I'll lose my guess if he didn't put some queer notions into their heads."

"The Wigginses were all Baptists, you know, an' John Henry has always had a leanin' that way. He would have flopped many a time if I hadn't shamed him out of it. He jess smiled in that aggravatin' way some men folks has, an' he said:

"Cynthia, says he, 'it isn't the coat that makes the man nor the whiskers, either.'

"The Wigginses always had a nasty way of ending an argument by quotin' Scripture an' John Henry he took after them.

"You just wait an' see," says I, knowin' as I was right.

"I'm surprised you ain't heard of what Mr. Bass preached about on New Year's Day. You are sure no one ain't told you? Well then, he got up in the new-fangled pulpit of his new church an' he told his congregation that they was in the first year of the twen-

tieth century. Now, would you believe it, there wasn't a man in that church that had spunk enough to git up an' protest. Goodness knows, our time here below is short enough an' you would think even a Baptist would hate to be hauled into a new century ahead of time. My bed ain't always one of roses, what with John Henry's shiftlessness an' his family relations, but I don't complain to such an extent that I want my time shortened. I want some preparation for the twentieth century an' I want full measure for the nineteenth century. Well, now, that Mr. Bass he just bamboozled his whole congregation into believin' they was in the twentieth century an' I tell you it ought to be a solemn thought for some of them now, not that I am throwin' any stones at brother sinners. Our minister, he preached on our enterin' the last year of the old century an' he argued that we ought to make it count for ourselves an' for the church. It was a real stirrin' discourse, 'thout any fol-de-rol nonsense an' I tell you I felt good an' hungry for our New Year turkey when I came out of the church. The first person I see as I came out was Mis' Wiggins a swishin' her way down the street an' I says to her:

"Happy New Year, Mis' Wiggins," just like that.

"Happy New Century, Cynthia," says she in a way that showed she thought she had the better.

"You're a year too soon, Mis' Wiggins," says I.

"Not at all," says she, in that citified way she picked up when she was in N' York three years ago Christmas.

"Then Mis' Wiggins, she up an' told me that Mr. Bass had said we were in the twentieth century.

"You wouldn't doubt a minister's word, would you?" says she.

"Not if he was a Methodist," said I; "Our minister said he was in the last year of the nineteenth century, an' I guess he knows a thing or two."

"He's a good man probably," says Mis' Wiggins, superior like, but he's behind the times, Cynthia. I do wish you would sit under Mr. Bass."

"No, I thank you," said I. "No Baptist for me. Methodist is good enough."

"Now would you believe it, all those Baptist people say that they are in the twentieth century, an' all us Methodists say we are in the nineteenth century, an' when Baptist meets Methodist, they begin to arguefy, as if the thing wasn't as plain as the nose on Cy Wiggins's face, poor man. I says only this mornin'," says I, to John Henry:

"Do you recall that I took objection to Mr. Bass's side whiskers, John Henry, an' now see how he has led his flock astray. Amos Skilling ain't been able to do a stroke of work since New Year's, he's so busy trying to persuade Methodists that they're in the twentieth century, an' his woodpile is down so that I don't know how Mis' Skillings will get through the winter."

"What difference does it make?" says John Henry in his shiftless way.

"It don't make enny in partic'lar," says I, "only I wonder at people havin' so little sense. Can a man add one inch to his height by thinkin' about it, faith eure to the contrary notwithstanding? No sir, an' he can't add a year to the century, nuther."

"Well, you'd be suprised how that discussion has harmed this neighborhood. The Baptists, when they are cornered, as they are bound to be, just say the Methodists are slow an' behind the times, an' such. I've been gittin' dry groceries now for twenty years of John Butterworth, though he is a Baptist, but I stopped. When I went for 10 cents' worth of cloves for those muskmelon pickles of mine, which I season again in February, Mr. Butterworth he says:

"Well, Cynthia, I hope the new century finds you well."

"The century ain't found me yet," says I.

"That's so; you are a Methodist," says he.

"Yes," says I, "an' I am thankful that I have some sense," says I. "If this is the twentieth century then I only owe you nine cents for them cloves. Your bein' a year ahead of me in reckonin' time is likely to complicate my

tradin' here. You see I'd have to pay you a year in advance of my buyin' anythin' an' as times are I can't do it. I'll have to find some grocery merchant in my century," says I, an' with that I wished him good mornin' an' out I walked. Mis' Wiggins, she been around twice to discuss twentieth century, an' I laid her out flat each time. I just chalked out the first century from the year 1 to 99 on my Sally's little blackboard an' I went over it year by year with Mis' Wiggins an' when I got to 99 I says 'this belongs to the first century, don't it?' an' she says, right off, 'Yes.' 'Then,' says I, 'don't 1899 belong to the nineteenth century?' 'Yes,' says she. Then I got her to admit that the whole year 100 belonged to the first century, but she baulked at the year 1900 belongin' to the nineteenth century, an' then came the partin' of our ways. The Baptists and the Methodists are that torn up about it that most of one congregation don't speak to most of the other. I ain't got no time for these previous folks 'specially when they ain't got no sense an' I was sayin' as much to Mis' Wiggins when she took offense an' flounced out.

"Though John Henry was one of the Wigginses on his mother's side, he's natcherly so shiftless that he wouldn't move into a new century until the almanac rushed him, so my family ain't divided; but laws alive! the Methodists bein' in one century an' the Baptists in another will prevent any union meetin's, which have been so fruitful in the past. But, as I said to John Henry, I suspicioned those side whiskers of Mr. Bass's the minute I see them an' it looks as if we'd have to jolt along a year behind the Baptists. The amount of gossiping there is about this thing is enough to sicken you of women folks, though some of the men is just as bad. No, thank you, I'm just goin' now to finish up a batch of end-of-the-century soap. It must be real annoyin' to Mis' Wiggins not to be finder seekle, which she picked up in N' York three years ago Christmas. She said it was fashionable French for end-of-the-century. It's all the French she knows, poor thing, an' now she's got to drop it or be ungrammatical, an' she just despises bein' ungrammatical. Well, we all have our troubles."—New York Sun.

Women as Spies.

The Boer women are described as not one whit less patriotic in the present war than their husbands, and the story of how Mrs. Joubert actually won the battle of Majuba Hill is an illustration of the active patriotism they have more than once displayed. When the English were stealing upon the Boers at Majuba Hill it was Mrs. Joubert who first discovered them and hastened to arouse her sleeping husband. General Joubert was fast asleep, and he refused to believe that the English had got by the pickets without the alarm being given. It was not until Mrs. Joubert actually pulled him out of his bed, and made him see the enemy with his own

eyes, that he would admit the truth of her words.

When the Jameson Raid proved such a disastrous failure, because the Boers possessed their secret beforehand, it was generally supposed that one of the Englishmen in the plot had turned traitor and had given the secrets away. This however, has proven to be untrue. Kruger, having good reasons for suspecting some kind of treachery, consulted his wife, and her advice was to enlist as spies the barmaids of Johannesburg. This was done, and the secrets which the English gave out, or conversed about over their cups, were promptly transmitted to Kruger by the pretty barmaids. So well did this spy

Scrofula and Consumption

People tainted with scrofula very often develop consumption. Anemia, running of the ear, scaly eruptions, imperfect digestion, and enlargement and breaking down of the glands of the neck, are some of the more prominent of scrofula symptoms—are forerunners of consumption. These conditions can be arrested, consumption prevented and health restored by the early use of

Scott's Emulsion

Your doctor will tell you so.

At all druggists; 50c. and \$1.00.
SCOTT & BOWNE, Chemists, New York.

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I sold 55,000 lbs. of this seed in 1899. My customers report yields of 450 to 1,250 bushels of onions per acre from this seed. Some of them intimate that this seed is worth \$5 to \$10 per lb. more than the California grown seed sold by anybody. I guarantee this seed to be new and freshly grown. We have seed of all the leading and standard varieties. We make special prices on large lots. Onion sets of all varieties. Buy direct from the grower. Catalogue—extended and illustrated—free.
Harry N. Hammond, Seedsman,
Box 1, FIFIELD, MICH.

DON'T STAMMER!

TESTIMONIAL

Santa Clara, Cal., Feb. 8, 1900.
On March 31, 1899, I sent my son, who was then a very bad stammerer, to Prof. J. Whitehorn for instruction. The professor was most successful in correcting his speech, and to-day he speaks and reads naturally and fluently and without any stammering whatever. The professor's name will never be forgotten.
GEORGE KOTH.

PROF. J. WHITEHORN, A. M., Ph.D.

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An Elgin watch always has the word "Elgin" engraved on the works—fully guaranteed.

"The Ways of a Watch"—our new booklet—sent anyone on request.

ELGIN NATIONAL WATCH CO., Elgin, Ill.

system work that President Kruger not only knew beforehand all about the preparations for the Jameson Raid, but he had inside information of the plans of the English Government which placed him in a position to meet every move with a counter-move. Military secrets leaked out in this way, and when the English increased their fighting force in South Africa by secret enlistments Kruger added a large number to his regular army. Likewise when more guns were shipped from England to South Africa, Kruger had even a greater number shipped almost simultaneously from Germany and France. These important steps were taken upon the information supplied by the woman spies—the pretty barmaids of Johannesburg.—Collier's Weekly.

About Prunes.

The medicinal properties of prunes act directly upon the nerves and nerve centers. To this fact I wish to call the attention to the reader, especially the nervous, fretty woman or child, writes May Lonard, in the Housekeeper. They will cure one of nervous disorders if persistently eaten. When a craving to eat something comes upon one, a dish of stewed prunes will satisfy the craving, and also be soothing to the nerves. To those who laugh at the idea, I will say that our family physician who advised me to use them several years since, has made a study of dietetics, and claims that prunes will do wonders for people who are depressed, irritable or generally bad tempered, besides regulating the bowels and correcting bad digestion. In my case I can say that they have done what years of medical treatment failed to do, cured me of nervous headaches that made life a burden. I also find that children sleep better and are better natured where they have bread, milk and a dish of stewed prunes for their supper.

The fruit is very inexpensive, for the sort I mean are dried or evaporated prunes. They should be washed and put to soak in warm (not hot) water at night and in the morning they will be beautifully large and plump. Cover them with water, simmer slowly for two or three hours, and they will be soft and the seeds will come out clean. They will be rich and sweet and will require no sugar, which is another point in their favor. Very few people cook dried or evaporated fruits long enough, and none of them should be boiled at all. I have eaten prunes that were stewed half an hour without previous soaking, and I did not wonder that they were not used oftener. I wish that every nervous, overwrought woman would give prunes a good trial; just try eating bread and butter and stewed prunes for supper a week or more, and stop drinking tea and eating all sorts of indigestible messes at night.

I allow the children to have a dish of prunes whenever they wish between meals, and bread and butter with them; no one ever saw healthier or better natured children. They never require any medicine, and how they sleep when night comes!

A FRENCH WRITER notes that though a few great musicians have died young—to wit, Mozart at thirty-five, Schubert at thirty-one, Bellini at thirty-three, Mendelssohn at thirty-eight, and Weber when he was but forty—a large number have lived to be very old men. Those who died between sixty and seventy years of age include Bach, Von Billow and Rubenstein. Living beyond seventy years came Gluck, Gounod, Handel, Liszt, Meyerbeer, Rossini, Spontini and Wagner, while the great age of eighty-nine was attained by Auber and others. Dying at more than eighty were Cherubini, Cramer, Laehner, Palestrina, Rameau, Schutz and Taubert. The average age of musical celebrities is sixty-seven years.

THE sultan of Turkey has just built at Mecca the largest house in the world. It is intended for the accommodation of pilgrims, and is capable of sheltering 6000 persons.

A SINGLE HUMAN HAIR will support four ounces without breaking.

Who May With the Shrewd Hours Strive?

Who may with the shrewd hours strive?
Too thrifty dealers they
That with the one hand blandly give,
With the other take away.

And glitters there some falling flake,
Some dust of gold, between
The hands that give and hands that take
Slipped noiseless and unseen.

Ah, comedy of bargainings!
Whose gain of years we found
A little silt of golden things
Forgotten on the ground.

—Arthur Colton.

The All-Important Hat.

A becoming hat or bonnet is always an interesting and important subject to a well-dressed woman, for she knows however perfect may be the details of dress, wrap, gloves and all other necessary adjuncts of a woman's toilet, it remains for the hat to make or mar the final effects. The question of personality is of primary consideration in selecting hats or bonnets, and women are beginning to see that the only way to obtain this individuality is to design if not fashion their own hats. If a real effort were made by each woman to secure artistic effects instead of such a frantic endeavor to get the latest fad or fancy, the world would contain more of loveliness. The colors worn have more to do with the general appearance than most people imagine; some think it no matter what colors are worn so long as they are fashionable. But we should learn to select the colors most becoming and avoid the ones which bring out defects. Dame Fashion demands that we must have a new hat for every season, but we are not always ready nor able to meet these demands, and those who are ingenious enough to remodel or fashion their own hats are indeed fortunate. If one has this creative faculty she can have hats and bonnets suitable for all occasions. If she has not the money to purchase a new hat she decides what she would like and proceeds to evolve it out of an old hat and east-off ribbons and laces. Some young girls who like to have money in their pocket-books so they can take nice trips in the summer or gratify their love for beautiful things which they cannot make themselves, decided not to buy new spring hats but made their last summer white hats take the place of a new one. They selected red and blue diamond dyes for cotton and colored the hats the desired shade, together with a lot of ribbon for trimming. After the hats were taken from the dye and rinsed, the crowns were pressed over a tin pail and the brims placed flat on the table to iron. They were then given a coat of thin varnish and they were ready for the trimming. The one who selected the dark blue dye colored at the same time a faded tan cape the same shade of blue as the hat, and is now provided with a nice hat and cape which cost very little and they are most becoming and stylish. It does not require so much money to attain this high art of dressing becomingly, but it does require industry and vigilance. Hats should be brushed every day before laying aside, to keep the dust from grinding in. Veils should be wound on a roller to keep them smooth and prevent their curling at the edges. This roller may be made of a piece of window-shade roller covered with silk or velvet and tied at the ends with bows of ribbon. A veil preserved in this manner will last longer and will always have the appearance of a new veil. A. M. H.

"Pluck wins! It always wins;
Though days be slow,
And nights be dark 'twixt days that come
and go,
Still pluck will win. Its average is sure.
Ho gains the prize who can the most endure,
Who faces issues, he who never shirks,
Who waits, and watches, and who always
works."

COFFEE, the drink more highly regarded to-day than any other, was first used in Abyssinia in 875. Thence it was brought to Arabia. A Greek first introduced it to England and made himself famous by the act.

Home Remedies.

Common plantain is one of the simplest, yet most effective, remedies that should be found in the medicine chest of every prudent housewife. A poultice made by boiling the leaves and stems in water, and thickening with corn meal, is excellent for a bruise, sprain or pain of any kind. Another of the weed remedies that our grandmothers used with excellent results is smartweed. A tea made of the herb, either green or dried, will often cure dysentery when other remedies fail. If a child is suffering from cholera infantum, make a poultice of smartweed and lay it across the stomach and bowels. A tea made of smartweed is used in cases where it is desirable to sweat the patient. Prepare it like any tea and let him drink a eupful or more if he likes.

A liniment that is good for man or beast is made by dissolving one ounce of gum camphor in alcohol, then adding one ounce each of sweet oil, turpentine, hemlock and cedar oil, and ten ounces of spirits of hartshorn. Put the ingredients in a bottle, cork it tightly and shake it before using.

When a cold affects the lungs and there is danger of pneumonia, take a cotton cloth of five or six thickness, wring it out of hot water, lay it over the lungs, and cover with several thicknesses of dry, hot flannel. Change the wet cloth for another as soon as it cools a little. When the pain in the chest is relieved, draw out the wet cloth, wipe the skin dry, and cover with flannel that is as warm as can be borne.

An excellent remedy for sore throat is made by dissolving one-half teaspoonful of borax and a pinch of salt in half a teacupful of water; gargle frequently. A solution of ten grains of borax to one ounce of soft water is a soothing lotion for inflamed eyes. Always put a little borax into the water with which the baby's mouth is washed. This will keep him from having the thrush, which is a very common and often dangerous disease of babyhood.

A bottle of syrup of ipecac should be kept in the house if the children are inclined to be croupy. When the little one awakes in the night with the hoarse cough that mothers soon learn to recognize, wrap him with a warm woolen blanket, and put his feet in water that is as hot as he can bear. Put hot compresses about his throat, changing them often. Give him several doses of ipecac—the directions on the bottle will tell how much to give children of various ages, and the length of time that should elapse between doses. Keep this up until the child vomits; then it will not be necessary to give any more. When the breathing becomes easier and looser you may know that you are getting the better of the disease. This is often a single-handed fight with death, for the doctor is frequently so far away that he could not possibly reach the child in time to afford relief, and everything depends on the mother, who must act quickly and not get frightened.—Selected.

Points Good on Wash Day.

Clotheslines are made much more durable by boiling for ten minutes before they are used.

Table linen should be ironed when quite damp and ironed with a hot and very heavy iron.

Embroideries should be ironed on a thin, smooth surface over thick flannel and only on the wrong side.

Linen may be made beautifully white by the use of a little refined borax in the water instead of using a washing fluid.

Wash fabrics that are inclined to fade should be soaked and rinsed in very salt water, to set the color, before washing in the suds.



Neglect of a Cough or Sore Throat often results in an Incurable Lung Disease or Consumption. For relief in Throat troubles use BROWN'S BRONCHIAL TROCHES, a simple yet effective remedy. Sold only in boxes.

WOULD you rather buy lamp-chimneys, one a week the year round, or one that lasts till some accident breaks it?

Tough glass, Macbeth's "pearl top" or "pearl glass," almost never break from heat, not one in a hundred.

Where can you get it? and what does it cost?

Your dealer knows where and how much. It costs more than common glass; and may be, he thinks tough glass isn't good for his business.

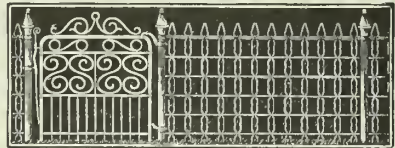
Our "Index" describes all lamps and their proper chimneys. With it you can always order the right size and shape of chimney for any lamp. We mail it FREE to any one who writes for it.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, March 14, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	66½@65½	—@—
Thursday.....	65½@66½	—@—
Friday.....	65½@66½	—@—
Saturday.....	65½@66½	—@—
Monday.....	65½@66½	—@—
Tuesday.....	66½@65½	—@—

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday.....	5s 9¼d	5s 8¾d
Thursday.....	5s 9¼d	5s 8¾d
Friday.....	5s 9¼d	5s 8¾d
Saturday.....	5s 9 d	5s 8¾d
Monday.....	5s 9 d	5s 8¾d
Tuesday.....	5s 9¼d	5s 8¾d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	96¼@ 97¼	1 03¼@ 1 04¼
Friday.....	97¼@ 97¼	1 04¼@ 1 04
Saturday.....	96¼@ 97	1 03¼@ 1 04
Monday.....	97 @ 96¾	1 04 @ 1 03¾
Tuesday.....	97¼@ 96¾	1 03¾@ 1 03¾
Wednesday.....	96¼@ 97¼	1 04 @ —

WHEAT.

There has been an absence of strength in the local wheat market most of the time since last review, but there was no great quantity of wheat offering, and it was the exception where stock was crowded to sale. Despite the weakness and absence of active inquiry, quotable values did not sag to any marked degree. Scarcity of ships and high freight rates are operating against exporters trying to buy wheat freely at present. Although stocks in farmers' hands in this country are reported by the Government to be 39,300,000 bushels less than a year ago, the quantity on hand on March 1st being given at 158,700,000 bushels, or 29% of the crop, as against 29.3% at corresponding date in 1899, the amount of wheat afloat is large as compared with the demand from importing countries, and so long as this continues there is little likelihood of there being much strength developed. The "visible" supply in the United States east of the Rockies showed the past week a decrease of 385,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 96½@97¾c.	
December, 1900, delivery, \$1.03½@1.04½.	
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at 96½@97¾c; December, 1900, \$1.04@—.	
California Milling.....	97¼@ 1 02¼
Cal. No. 1 shipping, alongside.....	96¼@ 98¾
Oregon Valley.....	95 @ 1 00
Walla Walla Blue Stem.....	95 @ 1 02¼
Walla Walla Club.....	85 @ 1 00
Off qualities wheat.....	82¼@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	68½d@68¾d	s—d@—s—d
Freight rates.....	—@22½s	40@41½s
Local market.....	\$1 12¼@ 1 15	96¼c@ \$1.00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

The market presents the same easy tone as for some weeks past, with stocks more than ample for immediate requirements. Quotable values are unchanged, but extreme quotations are more in accord with the views of holders than of wholesale buyers. In a small way favorite brands going to special custom are commanding comparatively good prices.

Superfine, lower grades.....	\$2 40@2 60
Superfine, good to choice.....	2 65@2 90
Country grades, extras.....	3 00@3 25
Choice and extra choice.....	3 35@3 60
Fancy brands, jobbing.....	3 60@3 75
Oregon, Bakers' extra.....	3 00@3 40
Walla Walla, Bakers' extra.....	3 00@3 40

BARLEY.

Market for this cereal has been very quiet since last review. Holders in the majority of instances were not disposed to force stock upon buyers, and were asking much the same figures as have been current for several weeks preceding. Buyers were looking for easier prices, however, and when not able to operate at figures to their suiting, confined their purchases to most immediate and pressing needs. Millers are now the principal operators in

the spot market. There is no purchasing observable at present on European account. The speculative market was devoid of activity or especially noteworthy features.

Feed, No. 1 to choice.....	75 @ 77½
Feed, fair to good.....	70 @ 75
Brewing, No. 1 to choice.....	87½@ 97½
Chevalier, No. 1 to choice.....	1 00 @ 1 07½
Chevalier, No. 2.....	— @ —

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 food barley, per cental, for the week ranged as follows for the options named:

Seller, 1900, new, —@—.
May, 1900, delivery, 73¾@—c.
December, 1900, delivery, —@—.

Wednesday, at regular noon session of the Call Board, No. 1 feed, May delivery, sold at 73¾c.

OATS.

The market is firm at prevailing rates for choice to fancy oats, such being in limited stock and in very fair request, mainly for thoroughbred and racing horses. Common qualities are in fairly liberal supply, and market for same is easy in tone, especially for ordinary Whites and Grays. Buyers looking to economy have been lately giving Blacks the preference, these being the cheapest oats on market.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 15 @ 1 22½
White, poor to fair.....	1 07½@ 1 12½
Gray, common to choice.....	1 10 @ 1 20
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	90 @ 1 02½
Red.....	95 @ 1 20

CORN.

Values are being as well sustained as last quoted, but demand is rather slow at full current rates. California product is offering a little more freely than for some time past, but the bulk of offerings of large corn continues to be Eastern. Domestic Small Yellow remains scarce and high.

Large White, good to choice.....	1 07½@ 1 12½
Large Yellow.....	1 07½@ 1 12½
Small Yellow.....	1 50 @ 1 60
Eastern Mixed.....	1 05 @ 1 07½

BUCKWHEAT.

Market is quiet, with no material change to note in quotable rates. Offerings and demand are both of small volume.

Good to choice, new.....	97½@ 1 00
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RYE.

With market practically bare of offerings, there is little upon which to base quotations other than the bids of local millers, who are governed in their views by the cost of laying down the Eastern article.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

While market cannot be termed active, there is a very fair amount of business doing for this time of year, largely in white beans on Eastern account. Values are being as a rule quite well maintained. There is no undue selling pressure observable. The opinion generally prevails, and appears to be well founded, that there will be sufficient demand to effect a clean-up of all desirable stock, at current rates if not still firmer figures, before the next crop will be available.

Pea, fair to good, 100 lbs.....	3 10 @ 3 35
Small White, good to choice.....	3 10 @ 3 25
Lady Washington.....	2 90 @ 3 10
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 65 @ 2 85
Bayos, good to choice.....	3 25 @ 3 40
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 10 @ 5 25
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

Late advices by mail from New York give the following review of the bean market, prices quoted being per 60-lb. bushel:

The volume of business has been quite small throughout the week, and, while receipts of domestic stock have continued light, enough of the foreign beans are coming along to make rather an easy market. Jobbing trade is smaller than was looked for, and exporters are getting but little encouragement. Choice Marrow are not at all plenty and a few sales reported to jobbers at \$2.22½@2.25, but average lots have sold at \$2.20, and are easily bought at that. Duty has been paid on some of the imported Marrow, and they have jobbed at \$2.00@2.05, but as a rule this foreign stock is sold to West Indian exporters at \$1.70@1.75 in bond. Medium and Pea have been shaded fully 2½c., and close easy at \$2.10 for the former, and \$2.10@2.12½ for the latter, with some good bag stock to be had a little less. Further arrivals this week of over 4300 bags foreign beans; they have had some distributing trade, but the movement has not been large and prices have leaned in buy-

ers' favor. Pea are not so plentiful as Medium and are commanding \$1.90@1.95 for the best. In a jobbing way from store \$1.90 is obtained for fine Medium, but round lots of prime quality are offering generally at \$1.85, with second quality selling at \$1.75@1.80. A Government order for 285,000 pounds will be filled early next week. Red Kidney still dull and weak; outside quotation quite extreme. White Kidney lower, and Turtle Soup neglected. A few Yellow Eye sell at about \$2.30@2.35. California Lima steady at \$3.50, but imported Giants are a shade easier. Both green and Scotch peas have declined.

DRIED PEAS.

Owing to absence of offerings, same inactivity as previously noted is being experienced. Values are nominally as before.

Green Peas, California.....	2 00 @ 2 15
Niles Peas.....	2 00 @ 2 15

WOOL.

Nothing doing in grease wools, there being practically no stock here upon which to operate. Initial shipments of spring clip are looked for in a few days, and after being tested by scourers, it will be possible to give some idea of values. At latest London sales there was a decline in prices of 7@10%, with considerable activity at the reduced figures.

	SPRING.
Oregon Eastern, choice.....	13 @ 16
Oregon Eastern, fair to good.....	11 @ 13
Oregon Valley.....	17 @ 20

	FALL.
Humboldt and Mendocino.....	16 @ 17½
Middle Counties, defective.....	9 @ 12
Northern, free.....	11 @ 14
Northern, defective.....	9 @ 11
Southern Mountain.....	9 @ 11
San Joaquin Plains.....	— @ —
San Joaquin Lamb.....	— @ —

HOPS.

Jobbers are quoting a rather stiff market, and so it is to buyers who wish to purchase select in a small way from second hands. There are no strictly choice hops offering in wholesale quantity. Common to fair hops continue to be offered freely, particularly in Oregon and Washington, and are meeting with scarcely any attention.

Good to choice, 1899 crop..... 6 @ 9

The following review of the hop market, by a New York authority, comes through by mail of a late date:

Nearly 1000 bales more have come in this week than last, but receipts have been made up largely of stock that dealers bought recently in the interior. The evidences of strength that have been noted of late are becoming still more pronounced and some grades are commanding more money than at any time since the turn of the year. Buying is still on rather conservative lines, but the movement is fairly satisfactory, and dealers have sufficient confidence in the position to take on more stock about as fast as former purchases are afloat. No one is pleased with the quality of either the State or Pacific coast hops, but the trade is getting used to them and brewers can find nothing else. Choice hops have become very scarce; if here, they would bring 13@13½c. Most of the sales are in range of 9@12c. for medium to prime, while low grades are going at 6@7c., rarely below the latter figure. Yearlings are in very small supply and inquired for, but old odds are dull. Fuller reports from the interior of this State and the Pacific coast indicate the lightest stock of hops in growers' hands than there has been at this season for many years. The Government report shows that the increased production of beer for the last three months has been from 10% to 15% over the corresponding months last year.

HAY AND STRAW.

The hay market is displaying little life and more weakness for the ordinary run of offerings than at any previous date this season. Strictly choice Wheat hay is still commanding moderately firm figures, with sales up to \$10 in a small way, this description being in light receipt. Straw is not arriving freely, but prices are without improvement.

Wheat.....	6 50@ 9 50
Wheat and Oat.....	6 50@ 9 00
Oat.....	6 00@ 8 00
Barley.....	5 00@ 7 00
Alfalfa.....	5 50@ 7 00
Stock.....	4 50@ 5 50
Compressed.....	6 50@ 9 50
Straw, p bale.....	30 @ 45

MILLSTUFFS.

Values have not changed materially for millstuffs of any sort during the week under review. Stocks and offerings were not particularly heavy and demand was fair.

Brans, p ton.....	11 50@12 50
Middlings.....	15 00@17 00
Shorts, Oregon.....	12 00@15 00
Barley, Rolled.....	16 50@17 00
Cornmeal.....	23 50@24 00
Cracked Corn.....	24 50@25 00

SEEDS.

Business is of a light order and at gon-

Prunes

grow larger, contain more sugar and bring the highest market price when fertilized well with

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A good fertilizer for prunes ought to contain at least 8% of actual potash.

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erally unchanged rates. Alfalfa seed is in slim supply and in few hands; the holders are said to have made a combine on prices. New Hemp is offering.

	Per cth.
Mustard, Trieste.....	3 25@3 50
Mustard, Yellow.....	4 50@4 75
Flax.....	2 00@2 25
	Per lb.
Canary.....	3¼@ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4½
Timothy.....	4 @ 4½
Alfalfa, Utah.....	9 @ 10

BAGS AND BAGGING.

Dealers report a very quiet market for Grain Bags, despite the fact that crop prospects in a large portion of the State are first-class for this early date. There is some movement in Wool Sacks on account of spring shearing, and at steady figures.

Calcutta Grain Bags, buyer June-July.....	6¼@—
Calcutta Grain Bags, spot.....	6¼@—
San Francisco Grain Bags, 22x36, spot.....	6¼@—
State Prison Bags, p 100.....	5 65@—
Wool Sacks, 4 lbs.....	—@32¼
Wool Sacks, 3½ lbs.....	—@28¼
Fleece Twine.....	7¼@—
Gunnies.....	—@13¼
Bean Bags.....	4¾@ 5¼
Fruit Sacks, cotton.....	6¼@ 7¼

HIDES, PELTS AND TALLOW.

The Hide market is quoted weak for both Dry and Wet Salted, but more particularly for the latter. Horse Hides are in moderate demand at same rates lately current.

HONEY.

Market is exceedingly quiet, with not much inquiry from any quarter, and only quite limited stocks of either Comb or Extracted, present supplies being almost wholly in the hands of jobbers. Prices ruling are the same as have been current for some weeks past.

Extracted, White Liquid.....	7¼@ 8
Extracted, Light Amber.....	7 @ 7½
Extracted, Amber.....	5 @ 5¼
White Comb, 1 lb frames.....	11¼@12¾
Amber Comb.....	8 @ 10

LIVE STOCK AND MEATS.

Beef was not in very active request, but last noted quotations remained in force. Values for Mutton showed no quotable change, but offerings were ample for immediate requirements. Veal and Lamb tended in favor of the consumer, although values were not materially disturbed. Receipts of Hogs showed some increase, and market was easier in tone, although not quotably lower.

Beef, first quality, dressed, net p lb.....	6¼@ 7
Beef, second quality.....	6¼@—
Beef, third quality.....	6 @—
Mutton—ewes, 7@7¼c; wethers.....	7¼@ 8
Hogs, hard grain fed, medium.....	5¾@ 5½
Hogs, small, fat.....	5¾@ 5½
Hogs, large, hard.....	5¼@—
Hogs, acorn-fed.....	—@—
Hogs, feeders.....	5 @ 5¼
Hogs, country dressed.....	5¾@ 6
Veal, small, p lb.....	7 @ 9¼
Veal, large, p lb.....	7 @ 8
Lamb, spring, p lb.....	10 @—

POULTRY.

While there were fairly liberal receipts of Eastern poultry, seven carloads coming

to this center the past week, arrivals from the interior of this State, or from all Pacific coast points, were light and sold in the main to good advantage. The firmness was confined more particularly to Young Chickens, although old fowls of desirable size and in fair condition were by no means neglected. Turkeys were in reduced receipt and market was slightly firmer, but demand for either Gobblers or Hens was not brisk; the latter received the preference.

Turkeys, dressed, # lb.	11	@	12
Turkeys, live hens, # lb.	11	@	12
Turkeys, live gobblers, # lb.	11	@	12
Hens, California, # dozen	4	50	@ 5 00
Roosters, old, # dozen	4	50	@ 5 00
Roosters, young (full-grown), # dozen	6	00	@ 7 00
Fryers, # dozen	5	50	@ 6 00
Broilers, large, # dozen	5	00	@ 5 50
Broilers, small, # dozen	3	50	@ 4 50
Ducks, # dozen	4	00	@ 5 50
Geese, # pair	2	00	@ 2 25
Goslings, # pair	2	50	@ 3 00
Pigeons, old, # dozen	1	25	@ 1 50
Pigeons, young	2	00	@ 2 25

BUTTER.

There was a fairly active shipping demand, causing market to show more firmness, quotable values recording an improvement of about 1c per lb. Prices for dairy butter were better maintained relatively than for creamery product, the latter being in most liberal supply.

Creamery, extras, # lb.	22	@	—
Creamery, firsts, # lb.	21	@	—
Creamery, seconds, # lb.	20	@	—
Dairy, select, # lb.	19	@	20
Dairy, seconds, # lb.	18	@	19
Dairy, soft and weedy, # lb.	—	@	—
Mixed store, # lb.	15	@	16
Creamery in tubs, # lb.	19	@	22
Pickled Roll, # lb.	—	@	—
Firkin, California, choice to select, # lb.	20	@	23
Firkin, common to fair, # lb.	17	@	19

CHEESE.

While there is a fair shipping demand, and movement on local account is about of average volume, offerings of new domestic keep ahead of requirements and market continues to favor buyers. Shippers are anticipating still easier rates. The Eastern market is lightly stocked and is strong for cheddars, having advanced about a cent the past week, making actual cost of landing same here 15 1/2 @ 16c, to which must be added the jobber's profit for a selling price.

California, fancy flat, new, # lb.	9	@	—
California, good to choice, # lb.	8 1/2	@	—
California, fair to good, # lb.	8	@	—
California Cheddar, # lb.	—	@	—
California, "Young Americans", # lb.	9	@	10

EGGS.

An advance of 3 @ 5c per dozen was established in the egg market this week, due to decreased receipts and considerable shipping and speculative demand. It is doubtful about the advance proving permanent. There is not likely to be any packing of consequence done at the higher figures.

California, select, large, white and fresh, # lb.	19	@	20
California, select, irregular color & size, # lb.	16	@	18
California, good to choice store, # lb.	14	@	16
Eastern, as to section and grading, # lb.	—	@	—
Eastern, cold storage, # lb.	—	@	—

VEGETABLES.

Although the general tendency of the market for spring or early summer vegetables was to lower values, there were some exceptions, notably among them being Tomatoes and Summer Squash, which were in light receipt and higher. In the market for winter vegetables about the only noteworthy feature was the firmness for Onions of desirable quality, such being in light stock.

Asparagus, # box	1	00	@ 2 00
Beans, String, # lb.	6	@	9
Cabbage, choice garden, # 100	40	@	—
Cauliflower, # dozen	50	@	—
Cucumbers, hothouse, # doz	1	00	@ 1 50
Egg Plant, # lb	10	@	12 1/2
Garlic, # lb.	3	@	5
Onions, Yellow, Cal., good to choice, # 200	2	00	@ 2 30
Onions, Oregon, # cental	2	10	@ 2 30
Peas, Sweet, garden, # lb.	3	@	4
Peppers, Green Chile, # lb.	—	@	—
Peppers, Bell, # lb.	—	@	—
Rhubarb, # box	75	@	1 25
Squash, Marrowfat, # ton	—	@	—
Squash, Summer, # box	1	25	@ 1 50
Tomatoes, Southern, # box	1	00	@ 1 50
Tomatoes, Bay, # box	—	@	—

POTATOES.

Receipts aggregated materially lighter than for several weeks, the decrease being mainly in the arrivals from Oregon. Market showed more firmness, and for choice to select table potatoes, such as fancy Burbank Seedlings, inclined specially against buyers. Sales of latter sort were made up to \$1.15 in a small way, but this figure was not warranted as a quotation.

Burbanks, River, # cental	40	@	90
Burbanks, Bay counties, # cental	60	@	95
Burbanks, Humboldt, # cental	70	@	1 00
Burbanks, Oregon, # cental	50	@	1 05
River Reds, # cental	—	@	—
Burbanks, Salinas, # cental	—	@	—
Early Rose, # cental	80	@	95
Garnet Chile, # cental	80	@	90
Peerless, # cental	1	00	@ 1 10

New Potatoes, # lb	2 1/2	@	4
Sweet, River, # cental	—	@	—
Sweet Merced, # cental	1	65	@ —

The Fruit Market.

FRESH FRUITS.

The only fruit of the deciduous line now offering in a quotable way is the Apple, with stocks of the same very light and steadily on the decrease. Market is very firm for desirable qualities. Strictly choice Red Apples are quotable up to \$2.25 per box, and in a small way might command an advance on this figure. Prices for common Cooking Apples show no pronounced advance. Strawberries are not arriving in large quantity. A few Longworths brought \$1 per drawer. The quotable range on large berries is from \$6 @ 10 per chest.

Apples, fancy, 4-tier box	1	75	@ 2 25
Apples, good to choice, # 50-lb box	1	25	@ 1 75
Apples, common to fair, # 50-lb box	50	@	1 00

DRIED FRUITS.

While the market for cured and evaporated fruits is not wholly stagnant, it is so very quiet that dealers without exception are complaining of the unsatisfactory condition of trade. Aside from Prunes and Peaches, Apples and Figs, and more particularly the first two named, stocks are of quite moderate volume, even for this time of year, but unless there is more rapid movement soon developed through positive demand and not through selling pressure, it is doubtful about the clean-up proving as satisfactory as had been generally hoped for earlier in the season. Some holders are now beginning to show uneasiness and vouch an inclination to shade prices to buyers in an attempt to attract custom, especially on Peaches, Apples, Figs and large Prunes. The bright prospects, both here and East, for coming crop, are naturally having some effect on the market, doing away with all desire to carry any old stock into the new season. That present holdings will be mostly required and consumed before now fruit comes upon the market there is little or no question, but what figures will be realized is not so easy to determine. Every additional day of dullness is apt to increase the uneasiness and tempt holders to sell at small losses rather than hold and take the chances of realizing small profits later on. It is not likely that it will be necessary to do much shading of prices, even under most unfavorable conditions, and through possible developments the outcome may prove better than the most hopeful now anticipate. Of the little business doing, a considerable proportion is in Prunes, and while there is no improvement in price, it is believed values have touched bedrock. Orders for the four sizes cannot be filled at the customary ratio of prices owing to the scarcity of small Prunes.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb.	10 1/2	@	12
Apricots, Royal, fancy, # lb.	12 1/2	@	13
Apricots, Moorpark, # lb.	13	@	15
Apples, in 50-lb boxes, rings, pressed, fancy, # lb.	7	@	—
Apples, 50-lb boxes, rings, pressed, good to choice, # lb.	5 1/2	@	6 1/2
Figs, White, fancy pressed, # lb.	5 1/2	@	6 1/2
Peaches, unpeeled, good to choice, # lb.	7	@	7 1/2
Peaches, unpeeled, in boxes, # lb.	12 1/2	@	15
Pears, unpeeled Bartlett's, halved, fancy, # lb.	9	@	10
Pears, halved, unpeeled Bartlett's, # lb.	6 1/2	@	8
Pears, quartered, unpeeled Bartlett's, # lb.	6 1/2	@	7 1/2
Plums, Black, pitted, # lb.	6 1/2	@	7 1/2
Plums, White and Red, # lb.	7	@	8
Prunes, in sacks 40-50s, # lb.	4	@	4 1/2
50-60s, # lb.	3 1/2	@	3 3/4
60-70s, # lb.	3 1/4	@	3 1/2
70-80s, # lb.	3 1/4	@	3 1/2
80-90s, # lb.	—	@	—
90-100s, # lb.	—	@	—
110-130s, # lb.	—	@	—
Prunes in boxes, 1/2c higher for 25-lb boxes, 1/4c higher for 50-lb boxes, # lb.	3	@	—
4 sizes Santa Claras and equal, # lb.	2 1/2	@	2 1/2
4 sizes San Joaquin and Northern, # lb.	2 1/2	@	2 1/2
Prunes, Silver, # lb.	4	@	7

COMMON SUN-DRIED.

Apples, sliced, # lb.	4	@	5
Apples, quartered, # lb.	4	@	5
Figs, Black, # box	—	@	3
Figs, White, # box	3	@	3 1/4
Peaches, unpeeled, # box	5	@	6

Recent advices by mail from New York furnish the following report of the dried fruit market in the East:

Some little steadiness developed on prime evaporated apples early in the week and market showed an upward tendency, but at the close the position is weaker again and 6 1/2c. extremely high, in view of the free offers from interior sections at 6 @ 6 1/2c. for prompt delivery. Choice and fancy are meeting a moderate jobbing demand and outside quotations extreme; grades under primo receive little attention. Sun-dried sliced apples are weak, with prices lower. Strictly fancy State or Western quarters in carload lots would command 5 1/2c. or more, but few, if any, such available, and average best lots offering at 5 1/2c., with southern generally obtainable at 5 1/2c. for average best quality. Chops have had a fair inquiry and have ruled firm at full late prices, but cores and skins have been weak and low. Cherries and blackberries have advanced and raspberries also seem stronger, but huckleberries quiet and without change. California fruit has met a fair outlet at about former range of prices.

Apricots, Cal., Moorpark, 1899, # lb.	15	@	18
Apricots, Cal., Royal, 1899, # lb.	13	@	14
Peaches, Cal., 1899, peeled, # lb.	18	@	20
Peaches, Cal., 1899, unpeeled, in bxs, # lb.	7 1/2	@	9
Peaches, Cal., 1899, unpeeled, in bags, # lb.	7	@	8 1/2
Prunes, Cal., 1899, # lb.	3 1/2	@	7

RAISINS.

The same inactivity as previously noted is prevailing in the raisin market. Supplies are of light volume. In quotable rates there are no changes to record. It would be phenomenal to have much movement at present and it is not likely that conditions will change materially during the balance of the season.

F. O. B. FRESNO DELIVERY.

London Layers, 6-crown, # box	—	@	—
do do 5-crown, # box	—	@	—
do do 4-crown, # box	—	@	—
do do 3-crown, # box	1	60	@
do do 2-crown, # box	1	50	@
Valencia Layers, # 20-lb box	80	@	1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown	6 1/4	@	—
Loose Muscatel, seedless	5	@	—
Pacifics.—2-crown loose Muscatel, 5 1/4c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c.	—		
Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.	—		

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, # lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.	—		
Sultanas.—Bleached fancy, # lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.	—		
Loose Valencia.—Fancy, # lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.	—		
Valencia Clusters.—Fancy, # lb., 7c; choice, 6c; standard, 5c.	—		

CITRUS FRUITS.

Oranges were in fair request the past week, the weather most of the time being favorable for consumers taking hold of this fruit. There was a superabundance, however, of ordinary qualities, and market for this sort ruled weak. Choice to select Navels were not in excessive stock and brought comparatively firm figures, occasional sales of very superior fruit being made in a small way at an advance on quotable rates. Lemons continued to be offered in more than sufficient quantity for immediate needs, and the market remained favorable to buyers, although the scarcity of Limes improved to a moderate extent the demand for Lemons. Limes were quotably unchanged; buyers took hold slowly, however, at the prevailing rates.

Oranges—Navels, # box	1	25	@ 2 50
California Seedlings, # box	65	@	1 25
California Mandarin, # small box	—	@	—
Grape Fruit, # box	—	@	—
Lemons—California, select, # box	2	25	@ 2 50
California, good to choice, # box	1	75	@ 2 00
California common to fair, # box	1	00	@ 1 50
Limes—Mexican, # box	5	50	@ 6 00
California, small box, # box	50	@	1 25

NUTS.

Almonds are still in fairly liberal supply, with movement in them slow and market devoid of firmness. In Walnuts there is little doing, asking rates being practically unchanged; offerings are light and are mostly more or less off quality. Peanut market shows decided steadiness;

stocks of both imported and domestic are decidedly light.

California Almonds, shelled, # lb.	14	@	17
California Almonds, paper shell, # lb.	10	@	11
California Almonds, soft shell, # lb.	7	@	8
California Almonds, hard shell, # lb.	4	@	5
Walnuts, White, soft shell, # lb.	9	@	10
Walnuts, White, California, standard, # lb.	7	@	8
Chestnuts, California Italian, # lb.	8	@	10
Peanuts, California, fair to prime, # lb.	5	@	6
Peanuts, Eastern, hand-picked, # lb.	6	@	6 1/2
Pine Nuts, # lb.	5	@	6

WINE.

The general features of the market and quotable rates remain the same as stated in last review. The positive demand is light, dealers waiting for producers to make overtures. Quotations for 1899 claret continue at 15 @ 20c per gallon, as to quality and quantity, San Francisco delivery. Receipts of wine in this city in February were 1,384,220 gallons, as against 2,110,780 gallons for Feb., 1899. For the past two months receipts of wine at San Francisco aggregate 2,744,700 gallons, and for corresponding two months in 1899 were 3,950,987 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/4 sacks	172,338	4,322,922
Wheat, centals	476,528	4,851,960
Barley, centals	95,302	4,429,661
Oats, centals	7,930	629,738
Corn, centals	3,485	97,909
Rye, centals	1,240	91,150
Beans, sacks	1,881	326,467
Potatoes, sacks	19,450	957,040
Onions, sacks	690	135,258
Hay, tons	2,421	119,330
Wool, bales	133	36,408
Hops, bales	142	9,256

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/4 sacks	80,468	2,977,184
Wheat, centals	614,255	4,308,781
Barley, centals	47,059	3,522,407
Oats, centals	1,431	34,223
Corn, centals	502	14,317
Beans, sacks	498	21,495
Hay, bales	3,684	101,519
Wool, pounds	126,415	4,112,407
Hops, pounds	3,060	945,861
Honey, cases	33	3,340
Potatoes, packages	3,850	59,509

California Dried Fruit at New York.

NEW YORK, March 14.—Evaporated apples, common, 4 1/2 @ 5 1/2c; prime wire tray, 6 @ 6 1/4c; choice, 7 @ 7 1/2c; fancy, 7 1/2 @ 8 1/4c. California dried fruits slow at unchanged prices. Prunes, 3 1/2 @ 6c. Apricots, Royal, 13 @ 15c; Moorpark, 15 @ 18c. Peaches, unpeeled, 7 1/2 @ 9c; peeled, 18 @ 22c.

SEND ME ANOTHER BOTTLE.

Gridley, Ill., Nov. 1, 1899. The Lawrence-Williams Co., Cleveland, Ohio.—I have used one bottle of your Caustic Balsam and I think it is the very best liniment a man can get. Please send me another bottle as soon as possible. CHRIS. BUCHER.

R. Hall's Pulmonary Balsam,
For COUGHS and COLDS.
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WOOL, GRAIN, FLOUR
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Wagon Tops, Dust Hoods,
Dashes, Fenders.
Old Tops, Dashes and Fenders re-covered if sent to us. We sell Trimming Material of all kinds, also Top Dressing, Chamolais Skins, Sponges, etc. Write for Prices and How to Measure. CALIFORNIA TOP CO., 222 Mission Street, San Francisco, Cal.

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Special Introductory Price.

**Strongest, Best and Neatest
HANDY WAGON
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All Steel Except Tongue and Coupling Pole.

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PLATFORM **TRUCK.**

Weight, 600 lbs.
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the old reliable remedy for Spavin, Kingbone, Splints, Curbs, etc., and all forms of Lameness. It works thousands of cures annually. Cures without a blister, as it does not blister.



Searsburg, Bennington Co. Vt., Jan. 26, '98.
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I have lost your book, please send me one at once.
Yours respectfully, W. L. PRATT.
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DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEVEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR WEEK ENDING FEB. 27, 1900.

- 644,503.—INSECT DESTROYER—F. Dayton, Portland, Or.
644,284.—HORSESHOE—C. G. DeLay, Murphy, Cal.
644,064.—SCHOOL DESK—W. T. Dodd, Walla Walla, Wash.
644,286.—NAIL—J. T. Eyster, Eagleville, Cal.
644,289.—CONCENTRATOR—G. Gates, Jackson, Cal.
644,513.—SOAP HOLDER—W. R. Hall, S. F.
644,521.—DREDGER—D. Jordan, S. F.
644,210.—LOOSE LEAF LEDGER—E. L. McClure, S. F.
644,255.—LOCK—J. C. Meyer, S. F.
644,534.—TONGUE SUPPORT—J. J. Nagley, Marysville, Wash.
644,366.—JOURNAL BEARINGS—A. Newell, Pasadena, Cal.
644,448.—CIRCUIT CLOSER—Nye & McIntosh, Los Angeles, Cal.
644,457.—DREDGER—W. B. Pless, S. F.
644,459.—FISH TRAP NET—T. Redding, Seattle, Wash.
644,450.—INK BOTTLES—E. J. Robinson, Santa Monica, Cal.
644,470.—BEET PLOW—W. F. Schmidt, Blanco, Cal.
644,153.—HOOK AND EYE—A. T. Snell, Los Angeles, Cal.
644,114.—CURTAIN POLE—A. S. Venen, Forest Grove, Or.
644,389.—COIN OPERATED MACHINE—J. L. Wilson, Los Angeles, Cal.
644,390.—COIN OPERATED MACHINE—J. L. Wilson, Los Angeles, Cal.
644,268.—REFRIGERATOR CAR—J. Zorbrist, Hanford, Cal.
32,274.—DESIGN—H. L. King, Spokane, Wash.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

PLOW.—A. G. Carter, Fresno, Cal. No. 643,838. Dated Feb. 20, 1900. This invention relates to improvements in plows. It consists of a frame mounted upon wheels, carrying the plate or cultivating mechanism, with a means for operating the same. A boom has one end connected with the frame, and extends to a distant center with which it is connected, and about which it and the plow frame are caused to move alternately from one end to the other of its arc of travel. An engine or motor is carried upon this center of motion, and power from this engine is transmitted to actuate the plowing mechanism and cause it to traverse the arc which is transverse to the line of travel of the machine as it progresses from one end of the field to the other. When the plows have traveled through this arc, the driving mechanism is reversed and the plow starts back on its arc of travel just overlapping the arc which has previously been plowed. In this manner a width of ground, nearly double the length of boom, can be plowed during the advance of the engine across the field, and thus a comparatively light engine or motor can be used on soft or marshy land because

the engine itself remains stationary while its power is being applied to drive the plows while making their cut, and the forward movement of the engine takes but little more power than is necessary to move itself.

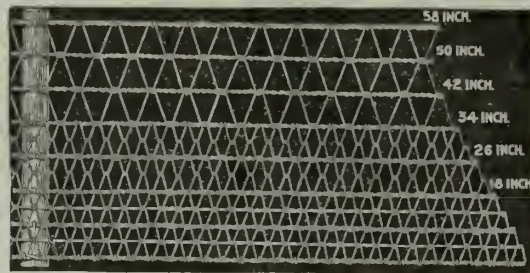
QUICKSILVER FURNACE.—H. C. Davey, Calistoga, Cal. No. 643,839. Feb. 20, 1900. This invention is designed to extract quicksilver and that class of metals from its ores. In the wrothing of quicksilver ores, it has been customary to place the ore in the roasting furnaces so that the moisture from the wet ore is expelled from the same exit with the fumes arising from the roasting of the ore, and result has been a very considerable loss of quicksilver on account of the vapors of the quicksilver being carried off by the escaping watery vapor and the formation of mercury seot or acid compounds which make it difficult to properly condense and save the mercury. In some cases the ores have been dried upon exterior tables, and have been placed in the furnace, but this does not avoid this difficulty, since the ore will absorb some moisture from the atmosphere before it goes into the roasting portion of the furnace. In my invention I have formed my furnace with an upper drying chamber, and a lower roasting chamber with direct inter-communication, so that the ore, after being thoroughly and perfectly dried at a comparatively low temperature, passes directly into the roasting portion of the furnace, where it is exposed to the higher temperature necessary to separate metal from its combinations.

FARE REGISTERS.—J. G. Miller, San Francisco, Cal. No. 643,879. Dated Feb. 20, 1900. Registering devices are employed upon street cars to indicate the number of fares, tickets, transfers or other representative of money received or for counting and other like purposes where it is desired to keep a registration of all transactions. In the use of such devices upon street cars it is difficult to keep the accounts of various conductors in proper shape, because the conductors are frequently transferred to different cars while the register remains upon the car. It is therefore necessary to take the amount shown by the register whenever a conductor leaves the car and a new one comes on, and at the end of the day it is also necessary when the car goes to the stable to take the final registering of each car as it comes in. The object of this invention is to simplify this matter by providing each conductor with a total register which is adapted to be connected with any of the registering apparatus of any of the cars of the line upon which he is employed, so that he can insert the device and connect it with the permanent mechanism on the car when he starts, and when he leaves the car he can disconnect it and take it with him to the next car, each conductor thus taking his own record with him throughout the day and turning it into the office when his work ceases.

FEEDER FOR THRESHING MACHINE.—James L. Patterson, Madera, Cal., and George T. Hill, Merced, Cal. No. 643,849. Dated Feb. 20, 1900. This invention is for an apparatus which is designed to feed unthreshed straw to the threshing cylinders in that class of machines. It consists of a series of superposed guided boards or fenders standing in inclined planes in a guided case and extending entirely across from side to side of said casing, these boards being connected with oppositely movable cranks whereby the boards are alternately reciprocated in their different planes of motion, and in connection with these are means whereby the straw delivered into the upper part of the machine is gradually moved down and fed continuously to the threshing cylinder by the oppositely reciprocating movements of the feeders.



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Made from hickory wood. Cheaper, cleaner, sweeter, and surer than the old way. Send for circular. E. KRAUSER & BRO., Milton, Pa.



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Or
In-
Breaking

of stock or animals is possible with a well-put-up

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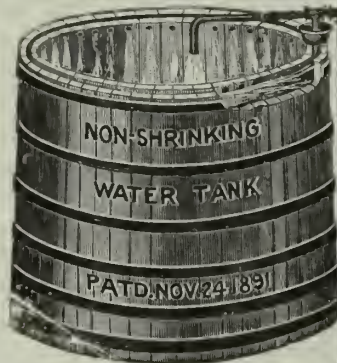
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In no respect like the Sherwood or other heavy steel rigging. Constructed on an entirely different principle. Light (weight 37 lbs.), very strong and perfectly flexible. Consists of two short wood bows, bent to fit the horse and not project beyond the side, suspended back of forelegs by padded back bands and covered by adjustable padded belly bands. Short leather tugs with adjustable buckles and cockeys connect the bow ends with the hames, making the **draft direct and just as in the old harness.** The team is coupled up by a free-jointed straight-wood evener, hooked into the loop in each bow. Can be separated or unharnessed in an instant. Each horse perfectly independent in his movements and can close up or spread apart in working. A back strap connects the harness with the back pad and a short draft chain runs from the evener-clevis to the load. A perfect all-round Farmers' Handy Harness for all low down field work. Used and approved by the best up-to-date farmers and fruit growers in the country. We don't furnish collars, headstalls or lines. Price, \$14.50, cash with order, freight prepaid. If not perfectly satisfactory return at our expense and money will be refunded. In ordering give size collar used.

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Investigation of Forest Fires.

A system of co-operation for the coming summer has been arranged between the Division of Forestry and the forest reserve work of the U. S. Geological Survey. The latter is a branch of the Department of the Interior. Field parties of each division will collect information desired by the other, and, in some instances, exchange of men may be made. This system marks a distinct change from conditions of a few years ago, when there was sharp rivalry between the scientific branches of Government service. The Geological Survey will give especial attention to collecting data on forest fires for the Division of Forestry.

Investigation of the causes, effects, and means of prevention of forest fires in the West, will be carried on this summer in Washington, Oregon, California, Arizona, New Mexico, Utah, Colorado, Wyoming, Montana, Idaho, South Dakota. Besides field study, designed chiefly to discover means of preventing the evil, the Division is making a historic record of all important fires which have occurred in the United States since 1754. Although yet incomplete, this indicates that the annual recorded loss by forest burnings in the United States is, at the very lowest, \$20,000,000. It will probably run far above the sum as the Pacific coast States have been only partially examined. Accounts of over 5500 disastrous fires have been obtained in the seventeen States already examined. Michigan, Minnesota and Wisconsin have suffered the most severely. These records are taken chiefly from newspapers, and, where it has been possible to compare them with the figures of practical lumbermen, it has been found that the tendency of the press is to underestimate the damage.

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APPLES—4 to 6 ft.	"	" 7 00 " "
PEARS—4 to 6 ft.	"	" 14 00 " "
PEACHES—4 ft. and up	"	" 10 00 " "
PEACHES—3 to 4 ft.	"	" 8 00 " "
PEACHES—2 to 3 ft.	"	" 6 50 " "
PLUMS—4 to 6 ft.	"	" 10 00 " "

VARIETIES:

APPLES—W. W. Pearmain, Red Belleflower, Yellow Belleflower, Ben Davis, Jonathan and others.
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PEACHES—4 ft. and up—Alexander, Foster, Early Crawford, Late Crawford, Elberta, Salway, Susquehanna, Glohe, Muir. 3 to 4 ft.—Muir and Elberta. 2 to 3 ft.—Muir and Elberta.
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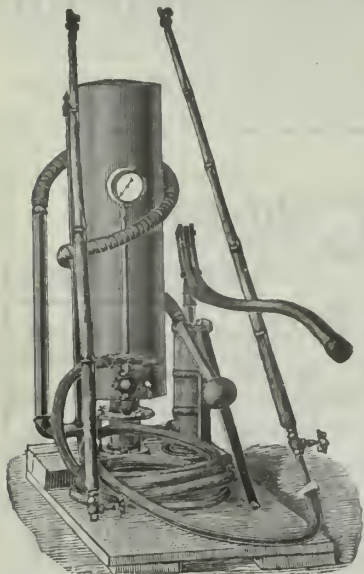
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NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock A. M., Wednesday, the 11th day of April, 1900.
I. C. STEELE, President.
CHARLES WOOD, Secretary.

THE VETERINARIAN.

Answers by Dr. Creely.

WARTS ON TEATS.

TO THE EDITOR:—Please tell through the columns of the PACIFIC RURAL PRESS of a remedy for warts on cows' teats. With the first calf they generally have none, but with succeeding calves some of our cows have teats that resemble the back of a horned toad.

Can you give plans for building a "snapping turtle" or "squeezer" branding chute—one that will answer all purposes for branding, dehorning and vaccinating?—CHESTER D. DUDLEY, Los Banos.

Apply formaline once daily, or dissolve silver caustic and paint over the surface once daily; caustic soda or potash is most severe and painful.

[Will some reader give a description of the chute desired?—Ed.]

TREATMENT FOR AN OLD SORE.

TO THE EDITOR:—I have a mare with an old barb wire cut of six months' standing. She is lame and there is much proud flesh on the front fetlock. Would be glad to have a receipt through your paper.—SUBSCRIBER, Lodi.

Nitrate of silver applied daily; or dust on Monsell's sub-sulphate of iron; by applying a hot iron to the raw surface you would hasten a cure.

KIDNEY COMPLAINT.

TO THE EDITOR:—I have a horse which urinates as often as ten or twelve times a day and his excrement is always accompanied with a little liquid. He has been in that condition for about eight months though he seems to be perfectly healthy otherwise and eats well. I don't know of his having been injured. Can you tell me what to do for him?—C. QUEEN, Fish Rock.

It is some kidney complaint. Give two quarts daily of thick flaxseed tea mixed with food, also a teaspoon daily of powdered buchu leaves. The liquid at the end of defecation is a good sign.

IT IS NOT ANTHRAX.

TO THE EDITOR:—We have about seventy-five head of calves under three months old. About eight head have died with a peculiar disease. They droop their head, run at the nose, run down in flesh like a calf with the scours, and after two or three weeks die. On examination after death we find the lungs dark red, full of blood and an occasional yellow spot in them.

I have also lost four head of calves with bloody urine. They seem to be healthy, but die in about a day after first noticing them. I find their bladder full of bloody water.

Is there such a thing as anthrax among calves?—R. C. ANDREWS, Clearwater, Los Angeles Co.

This is not anthrax and from the vague symptoms I could not hazard an opinion. The bloody urine is not a positive symptom.

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Patrons of Husbandry.

From the Worthy Master.

TO THE EDITOR:—American River Grange had a very enjoyable reunion on the 2nd inst. in their capacious hall. This Grange is one of the most prosperous in the State and its members are alive to the best interests of the Order.

There was a good attendance of their membership, while the following Granges were well represented: Sacramento, Capital, Elk Grove, Florin and Roseville. A communication from Fair Oaks was received informing the American River Grange that a delegation from that Grange would row across the river and be in waiting at a given place, where if met by American River Patrons they would be able to join in the festivities.

It was the regret of all present that the communication was in some way delayed so that it was received too late to let the Fair Oaks Grange know that the members would be met as desired. The W. M. of American River Grange, Bro. Lauridson, sent his team even at the eleventh hour to the appointed place of meeting, but our Fair Oaks brothers and sisters had not ventured across the river on uncertainties and we were denied the pleasure of their attendance.

Two Past Masters, viz., Bro. Daniel Flint and Bro. W. W. Greer, were present and addressed the afternoon meeting of the Grange. The Worthy Matron also spoke in a very happy manner, giving practical instructions of how to make the Grange a financial benefit.

A promising class of young men and women were made Patrons of Husbandry. This was my first official visit to American River Grange, and I was more than pleased to see the work so admirably done. The beautiful lessons of our ritual were very impressively rendered. The Order should feel encouraged and animated with great enthusiasm that the young are being trained to fill all offices in life, in a well conducted Grange. I hope it will be my privilege to see many more brought under the salutary influences of our Order.

The American River Patrons are accustomed to long days, and their programme of initiation in the forenoon, harvest feast at noon and speeches and fraternal greetings in the afternoon was followed in the evening by a ball—to which young people from many miles distant came.

We were the guests of Bro. Cornell and his estimable wife at their hospitable home near the American River Grange hall. The young people and the Worthy Matron finished their Grange celebrations at 4 o'clock the morning of the 3rd and felt the long day well spent.

Saturday morning the Worthy Matron left for San Jose, and, in company with Bro. J. D. Cornell and Sisters Cicely and Etta Cornell, we attended the Sacramento Co. Pomona Grange, of which Bro. J. D. Cornell is Worthy Master.

Business of practical importance was transacted at their meeting. They have but to carry out what they have in mind to do to be of great use in the county. While in Sacramento I was entertained by Bro. and Sister Flint and was impressed with the many inventions for conveniences about the home and farm of the ingenious brother. My rides about the county with Bro. Flint, behind his thoroughbreds, at the rate of better than 2:40, will long be remembered.

Wednesday, the 7th, found me in Union Grange at Lodi. It was the liveliest of its size I have attended, and there was a fair number present considering the short notice. The Patrons of Lodi are like the oak—sturdy and reliable.

Union Grange has decided to have good roads in the county. The Secretary was instructed to make arrangements with W. H. Aiken to address the people with reference to forming an association to care for and market their fruits and thus make fruit raising

profitable in San Joaquin county. Woman's work in the Grange was extolled, and all were inspired with the greatness of the work of the Order of Patrons of Husbandry. It is evident that Union Grange is second to none in its desire for improvement in the Order and in the community.

G. W. WORTHEN,
M. Cal. State Grange.

Tulare Grange.

To THE EDITOR:—After reading and approving the minutes, Bro. Forrer read a report of his meteorological record at the University sub-station for February: Highest temperature, 82° on the 24th; lowest, 32° on 8th, 9th and 10th; precipitation for the month, 1.05; prevailing wind, N.W.; 11 clear days, 14 fair, 3 cloudy.

The Committee on Farmers' Institute reported a full programme, which was approved. The Institute will last Friday and Saturday—the 30th and 31st. All of Saturday forenoon and afternoon will be given to a consideration of irrigation by ditches and pumping, conservation of streams, underground waters and water rights, pumps, pumping powers and farm storage reservoirs. Saturday evening's session will commence with a paper on "The Work and Purposes of the Order of Patrons of Husbandry," to be followed by Prof. Haynes' interesting account of "Agriculture in the Philippines."

A PLEA FOR OUR SONG BIRDS.—Sister Berry read this paper:

Tulare Grange courteously pleads with the press at large that they publish the following: As a farmers' organization, trying to do good, we recognize the song birds of our State as among our best friends in our agricultural and horticultural pursuits. The tomits, peewees, bluebirds, wrens, ground chippies, robin red-breast, larks and many others are our true friends in more senses than one. Their habits of feeding show them to be great destroyers of predaceous insects. We deprecate their wanton destruction for millinery uses. We plead with the women and girls of our State to aid Tulare Grange in this matter of protecting our song birds. We kindly and respectfully, as well as sincerely, ask our lady friends of the cities, as well as those of the rural districts, to abstain from using dead song birds for decorative purposes on their hats and otherwise.

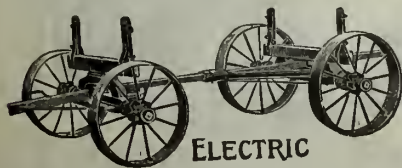
After consideration and discussion, the Grange approved the paper.

ELECTRIC POWER FOR PUMPING.—The cost of electric power for pumping purposes was brought up. Sister Morris stated that, before coming into the hall, Mr. W. B. Cartmill informed her that inasmuch as deciduous and citrus fruits are irrigated in different months, arrangements can be made with the electric power company whereby persons renting pumping power can use it in or near the foothills in one season, and lower down in the valley at another season, thus economising cost of power. It is understood the same power may be used by one or more persons.

IRRIGATION DISCUSSION.—The subject of the day's consideration being "Resolved, Our best dependence for irri-

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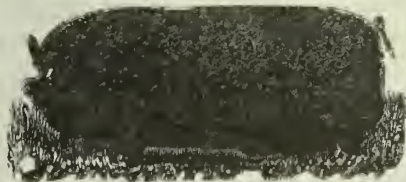
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gating water is on the flow of the streams, rather than on underground waters," the Brothers who were to take the affirmative were conspicuous by their absence. Bro. Mull, on the negative side, affirmed our main dependence will be on the underground waters, and the day is not far off when the farmer in his home will touch the button and the water will flow over his land to fertilize and make it fruitful. Bro. Mull has for more than twenty years bored wells in this valley for water to irrigate with. His account of the different strata of soil met with in boring, and the different streams of water, from the surface water to that 1200 feet deep, were very interesting and were listened to with marked attention. Bro. Mull told us in the well he bored for Mr. Lamerson in the now dry bed of Tulare lake, 1050 feet deep, the last 250 feet contained a large amount of shells, the vertebrae and other bones of fish.

When the Lecturer appointed Bro. Mull to discuss the subject, he kicked, saying he could not make a speech; but he did speak, and his talk held the close attention of the Grange and carried it with him. He knew what he was talking about.

Resolutions were passed asking our Representatives in Congress to support any measure which will provide for the immediate construction of the Nicaragua canal by the United States, for the United States, to be controlled by the United States.

Resolutions in favor of preserving the Calaveras grove of sequoias were spoken of, but were deemed unnecessary, inasmuch as Congress has provided for bonding it, and that ten years ago Tulare Grange initiated measures by which Sequoia gigantia groves in Tulare county were preserved to the world and science, from which several Calaveras groves would scarcely be missed, if taken. J. T. Tulare.

Beware of Ointments for Catarrh That Contain Mercury.

As mercury will surely destroy the sense of smell and completely derange the whole system when entering it through the mucous surfaces. Such articles should never be used except on prescriptions from reputable physicians, as the damage they will do is tenfold to the good you can possibly derive from them. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., contains no mercury, and is taken internally, acting directly upon the blood and mucous surfaces of the system. In buying Hall's Catarrh Cure be sure you get the genuine. It is taken internally, and made in Toledo, Ohio, by F. J. Cheney & Co. Testimonials free.

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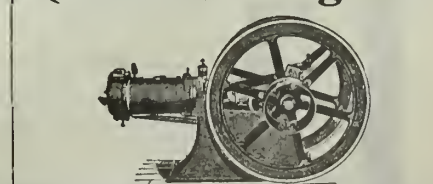
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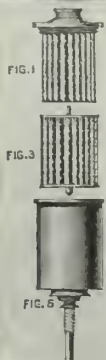
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Victorious Progress of the United States, have tried to make a big bugbear of using hot water to flush the bowl, but now this, their last criticism, is overcome, and they are at loss to know what to harp on to prejudice purchasers against the Improved U. S. and reduce the constantly increasing sales. Write for our 1900 or "New Century" catalogue giving full particulars.

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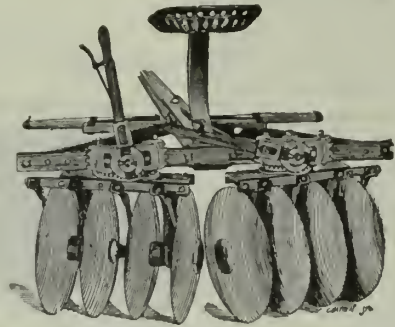
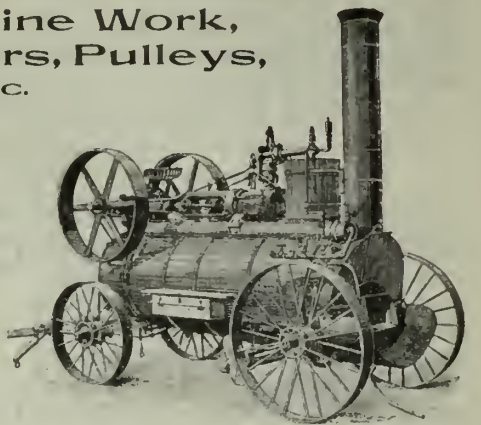
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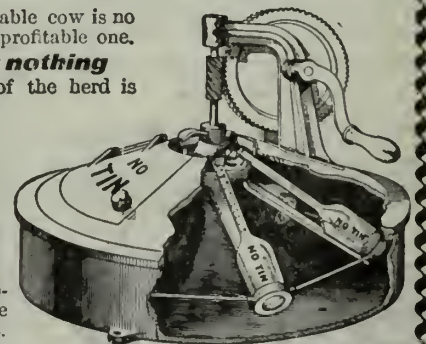
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 12.

SAN FRANCISCO, SATURDAY, MARCH 24, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Root Grafting the Walnut.

While the grafting season is still on, we will pursue the reformation of the tree a little further and show how trees can be made with scions and seedling roots on much the same plan that other root grafts are



Scion in Place in Root Graft.

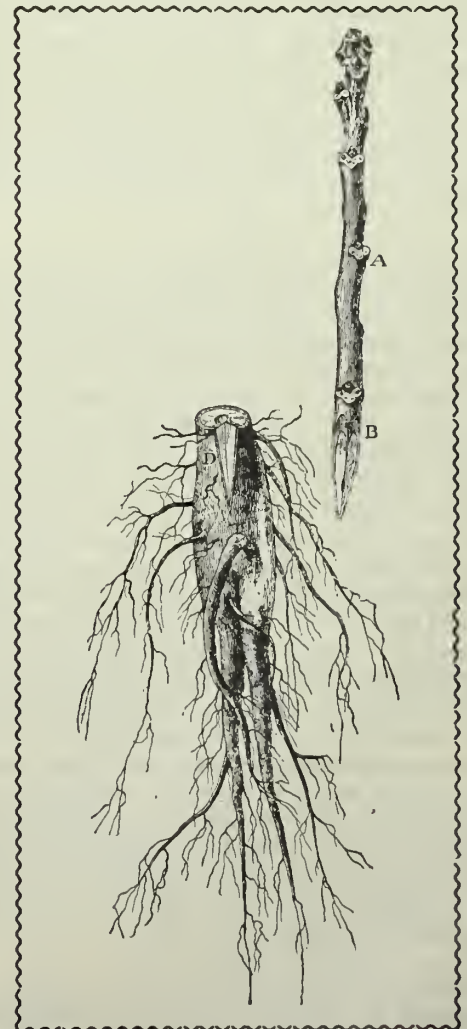
three inches if the soil be light, as it should be for this purpose. For the cleft graft in the root, as shown in the first two engravings on this page, the roots should be taken up at the end of the first season's growth and grafted on the bench. The top of the seedling is cut off at the root crown, the root split somewhat obliquely to avoid deep splitting, the scion cut wedge-shaped pushed into its place and the root firmly tied around with soft twine and waxed. The first picture shows the scion set in the top of the root; the second shows the same tied and well waxed ready for planting in the callusing bed, prepared as



Same Graft After Tying and Waxing.

can be kept several weeks in this bed until the outside ground comes into condition for planting, and they will by that time be callused and not liable to failure from drying out, as they might if planted at once in open air.

The side graft in the root by a triangular cut without splitting also succeeds well with the walnut as it does in grafting in grape roots. It can be worked on older roots to advantage and it can also be done without taking up the root and is available either for seedlings in the nursery row or for working over seedling from nuts put in orchard place. The engraving quite clearly shows the method. The smoothly cut notch D is made in the side of the root after the top is sawn off, being careful not to carry the cut in as far as the central pith. A is the scion of the variety which it is desired to establish and the lower end is cut with two faces at B so as fit the notch D. It is then put in place, held firmly and tied with twine or wrapped tight with a waxed band. In finishing the graft the wax is made to cover all exposed parts of the root and the joint as well. This graft should be placed a little distance under the ground by digging away the dirt and when the graft is finished the earth is carefully placed back and banked up around the scion to within an inch or two of the tip. This graft can be made in the spring at about the time the root becomes active. As with other grafting the scions should be dormant and for this purpose they should be cut earlier in the winter



A Side Graft in the Root.

made, except that more careful work is essential in adjustment of scion and stock, and waxing is to be well done, while in root grafting of some ordinary orchard trees callusing in sand can be done and the root graft set out without the use of wax. Root grafting can be done either by taking up the seedling and grafting on the bench during the dormant period, or it may be done upon the seedling stock in place by those who are imbued with the tap-root doctrine. The root may be the seedling of the English walnut or of the California black walnut, the latter having come into wide use during recent years.

For the figures used herewith we are indebted to the report of B. M. Lelong, secretary of the State Board of Horticulture, and they represent his work in this phase of walnut propagation. Seed walnuts should be kept in damp sand from gathering until they are planted out in place or in the nursery row. When they show signs of sprouting during the winter or early spring, according to the prevailing temperature of the locality, the nuts should be planted a foot or two apart in the covering, about

follows: On the floor of a shed moist sand is spread out from six to twelve inches deep. The grafts are put into this in an upright position as thickly as they may without interfering with each other. Sand should then be sifted over the whole bed, leaving only an inch or two of the tips of the scions protruding. Keep the sand moist, but not wet, for fear of rotting the scions, and they should not be allowed to dry, as shriveling of the bark will follow. The root grafts

and placed away in a cool moist place. A very satisfactory percentage of such grafts will succeed if the cutting is done with a thin, sharp blade and a good fit is secured.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, March 24, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Scion in Place in Root Graft; Same Graft After Tying and Waxing; A Side Graft in the Root, 177.
EDITORIAL.—Root Grafting the Walnut, 177. The Week; New Varieties of Wheat, 178.
QUERIES AND REPLIES.—Profits on Deciduous Fruits; Borers in Young Apple Trees; Capons and Caponizing; Apple Grafting and Apple Mildew; For the Canker Worm; For Apple Scab; The Mammoth Blackberry; Peach Buds Drooping; Whitewash for Fruit Trees, 179.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending March 19, 1900, 179.
STATE BOARD OF AGRICULTURE.—California Agriculture in 1899, 180.
THE FIELD.—A Dust Mulch; Alameda County Vegetable Growing, 180.
THE APIARY.—What to do for Bee-Stung Stock; Bee Men Organize, 181.
THE IRRIGATOR.—Building a Farm Reservoir; Irrigating Alfalfa, 181.
THE POULTRY YARD.—Progress of the Poultry Interest, 182.
THE DAIRY.—Raising Calves Without Milk, 182.
HORTICULTURE.—Coal Tar for Tree Wounds; French Prunes on Peach Root, 182.
AGRICULTURAL REVIEW.—183.
THE HOME CIRCLE.—An Old-Fashioned Woman; Mabel's Problem, 185. What to Teach Daughters; Health as Well as Beauty; A Singular Friendship; Chauncey Depew's Station; The Housewife's Best Friend, 185.
THE MARKETS.—Produce Market; Fruit Markets, 186-187.
FLORIST AND GARDENER.—Rubber Plantations; California Wild Flowers, 189.
PATRONS OF HUSBANDRY.—From the Worthy Master; Topic for Discussion in the Grange, 190.
THE VETERINARIAN.—Answers by Dr. Creely—Mule with La Grippe; Wolf Teeth and Eye Troubles, 191.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 188.

The Week.

Warm weather, with absence of hot winds and freedom from frosts, is giving a very favorable blooming and fruit-setting season, and so far the outlook is very good for crops. It is, of course, much too early to base any prediction upon progress thus far, but it is encouraging to know that the fruits have entered well for the race. Field crops are naturally profiting by the conditions which favor fruits, and we hear of grain fields in good shape, while pasturage has all along been in prime shape this winter. People are active and confident, and anticipate for the greater area of the State one of the best years California has ever known.

Wheat is in better heart this week and futures have advanced, though spot prices do not change. Feed barley is depressed by low feed prices generally, while oats and rye are unchanged. Corn is higher and firmly held in sympathy with conditions at the East, whence we get our supplies. Hay is just as bad as ever, although shipments southward are giving some outlet from interior valley points. The hay crop outlook is too good now to allow improvement in values. Beef is unchanged, while mutton declines a little and hogs have dropped a fraction in the face of heavier receipts. Poultry is quiet, as high rates discouraged poultry eaters. Eggs are lower and easier and butter shows the same conditions. Cheese is unchanged but weak. The bean market is strong, as the southern coast bean region will not be in it this year unless they get more water soon. Potatoes are mostly of poor quality and dragging, while onions are scarce and high—some Australian onions selling up to 5 cents per pound. Asparagus is in very large supply and lower, in spite of the relief by canning and shipping. Wool is beginning to arrive, showing good condition, and a good sale is anticipated. Probable prices are given in our market review upon another page.

The deaths during the week of W. B. West of Stockton and W. H. Nash of this city remove two fruit planters who were widely known, while the death of M. J. Church, formerly of Fresno, calls to mind his work of nearly three decades ago, which lies at the foundation of the irrigation development of the San Joaquin valley. All these men and others who are passing from sight this winter were called to mark out new lines of progress and they marked them well.

New Varieties of Wheat.

Some of our California exchanges are giving considerable prominence to the fact that the Department of Agriculture at Washington is manifesting much interest in the introduction of new varieties of wheat from various European points for local trial in this country. This is proper enough as signifying approval of an enterprising and timely piece of work which will no doubt prove of advantage in some parts of the country and may also be of benefit in some of the mountain regions of California to which the valley wheats are not well suited. It should be clearly stated, however, that the wheats secured, so far as we have seen samples and so far as we recognize the names published, are not of the types which are likely to be of advantage to our valley growers, who produce the wheat most acceptable to the export trade. We desire to emphasize this point lest our wheat-growing readers should be unduly excited and bestir themselves exceedingly to obtain that which will not be of material assistance to them.

It should be generally understood that whatever may be the real advantage of securing for the world's wheat eaters flour which shall be rich in protein or strength-giving elements, it is expected of California, and of the wheat regions of eastern Oregon and Washington, that they shall furnish for export to Europe a large white wheat exceptionally rich in starch rather than protein, because foreign millers need such peculiar wheat to mix with the free supplies of glutinous wheat which they receive from other parts of the world. This being the case our selection of wheats is from a very different point of view from that which prevails in other parts of the country. It is possible, of course, when we develop our future wheat and flour export trade to Asiatic ports, that we can use more dark wheat, but so long as we aim at the European markets the plump, white berry will bring the money and the angular dark berry will not, although it is richer in food elements and has, therefore, an actually higher food value.

Although this is a common fact readily ascertainable by anyone who will talk with our wheat exporters and look at the samples which they pay the highest prices for, it was long ago demonstrated in another way in this State. About fifteen years ago the University Experiment Station at Berkeley made a collection of popular wheat varieties from all parts of the world. Nearly 200 varieties were secured, including those which are now being introduced and described by the Department of Agriculture. Plats of each kind were grown at Berkeley and at other points for comparison, and bundles and threshed seed were made into a great exhibit, which was shown at the Mechanics' Fair in this city and at the State Fair—a vast wall-space being occupied with a display of the varieties, each named and credited to the country from which it came. This display attracted much attention and favorable comment, for Californians had never had opportunity to see so many kinds of grain before and were delighted with the striking forms and wide variations. But the collection appealed to them rather as a means of popular instruction than as a suggestion of change in their selection for sowing. They saw at once that but few of the whole list had the characters which are essential to California shipping wheat, and for this reason commercial wheat growers admired the grain display and then passed along. A few people secured samples of the seed and have grown the rather quaint varieties for exhibition at their county fairs, and beyond this no growers' purpose has been served, except that every year in some part of the State some man finds a stool of strange grain in his field, and calls upon his neighbors and the local editor to admire the new variety of wheat which he has produced. The new grain is nothing but the survival of some peculiar variety which has escaped from the University collection or some offshoot from it.

It is not at all strange that this should be the case—in fact, it could hardly be otherwise. Our white wheat goes to Europe for mixing with their dark wheats. If they had white wheats they would not need ours; and when we make collections from European provinces and countries, we get the dark wheats, of course. The wheats now grown in California are not of European origin, or at least they have undergone such modification in different climates

since they left Europe that they now have essentially new characters produced by peculiar climatic influences. Take the list of half a dozen commonly grown and see whence they come: White Sonora, White Chile, White Australian, California Club, Pride of Butte and Propo. There are others, but this half dozen will serve for illustration. Half of them are from countries resembling California in climatic conditions; the second half are counted of California origin because they can not be traced elsewhere. They may be chance variations fixed by selection here. The last two have a history of this sort localizing them in the Sacramento valley. All of them have been grown in California for more than twenty years, and some of them twice as long. They embody the characters which the shippers require; some of them have peculiar adaptations to the regions in which they are grown and they constitute the bulk of the product, as, for example, the Sonora in the upper San Joaquin valley and the Pride of Butte and Propo in the upper Sacramento valley, the others chiefly grown in the vast region comprising the lower regions of both the Sacramento and San Joaquin valleys and extending also into the regions first named.

Now, the promotion of the wheat interest of this State calls for better varieties than these, if there are any; but they must be of the same type, and improvement by recourse to opposite types—like those talked about by our contemporaries—can only be successful through a long process of acclimation, modification and selection, which may ultimately result in something better of the type we require. But this will take half a lifetime. The better way to proceed is to make search for improvements not in Europe but in arid wheat growing regions, where wheats suited to us are produced by conditions like those under which we grow wheat, or where definite selection toward such characters has been made by systematic workers in the origination of new varieties. The University has been proceeding along these lines during the last few years, and has distributed varieties which may ere long establish themselves as better than the old sorts.

Efforts to improve our wheats have been retarded by the lack of interest in the subject by wheat growers. Prices have been so low and margins so close that it has been hard to excite any interest or enthusiasm. While hundreds would rush after a new grape, or olive, or fig, or garden vegetable, you could count cereal seekers on your fingers; and while the men who received the fruits or vegetables would guard and watch them, the cereal grower would send the seed to the ranch and if the foreman did not feed it to the chickens he would forget where he had sown it. Recently, however, greater interest has been manifested and more people are seeking for better grains. Sometimes they expect from the new variety results which can only be secured by restoring plant food by fertilization or reinforcing scant moisture by irrigation, but never mind that they are awake to improvement, and that is a promising condition to start with. Californians may be said to be in better mind to try new cereal varieties now than they have been for a couple of decades, and we hope the search and introduction work of the Washington department will go on. We simply suggest that while their European cereals may serve a good purpose in some parts of California, they should seek in arid semi-tropical countries the types which suit our larger areas and our peculiar export trade.

A MEETING of the full board of the directory of the California Cured Fruit Association, will take place in San Jose on Monday, April 2, at 10 o'clock A. M. Business of great importance will come before the directors at this meeting of the board, and a full and complete statement will be made as to the progress of the work. It is anticipated that all seeming differences between the association and the packers may be amicably adjusted before the meeting. Reports will then show whether it is desirable to extend the time limit for signing of growers' contracts.

THE Raisin Growers' Association is sending out from Fresno up to date statements of its work which show that due progress is being made in securing contracts on the new basis of doing its own packing and the canvas to this end will be continued until the meeting early in April.

QUERIES AND REPLIES.

Profits on Deciduous Fruits.

TO THE EDITOR:—Can you give me any information through your paper as to the profitability of deciduous fruit culture, for drying and canning, in California, or refer me to any conservative work on the subject?—R. P., San Diego.

This is a subject which we always conscientiously avoid. So much depends upon the location and soil or upon the possession of varieties which suit the trade and bear well, and upon the treatment which the trees receive, that there can be no figures which could be assured. Even if the choice of place and varieties be the same, one grower will make money and another lose it, just as two storekeepers might, in the same town and with the same goods. There is little difference in the high figures which have actually been secured with different kinds of fruits. During the fruit season our columns contain authenticated instances of crop and sale which show this. We print them because we believe them to be true, but we would not compile them into a general statement because they would at once be taken as an indication of what is generally attainable, and thus lead many people into disappointment and losses. Fifty dollars an acre net profit would seem to be a reasonable and moderate estimate, and yet many do not reach it, while some, under favorable conditions, secure five times as much. How much one can make in growing fruit can be answered when we know how much a man can make in practising law or in publishing an agricultural newspaper. It is more in the man than in the kind of fruit, and yet may not be in either. We do our best to help our readers to grow good, acceptable fruit, but we cannot undertake to say what they will make at it.

Borers in Young Apple Trees.

TO THE EDITOR:—In December, 1898, I set out 200 apple trees. I paid the highest price for them and got what was said to be No. 1 trees, two years old. They were carefully planted and covered about the stem with cloths to protect them from sun scalds, and carefully cultivated. On examination last month I found over 20% of them ruined by borers about 1 inch long with large, flat heads—two, three, four and five in one tree. I cut in with a knife till I found the borer and if the tree was not too much cut I covered it over with grafting wax, but many were so badly injured that I had to cut them close to the ground and graft them over. I have planted many apple trees during the last eighteen years, but never had anything like this. What is the matter? Could the borers have been there before I bought the trees? I have planted 600 apple trees this season and would like to protect them from this evil. As you know everything about trees and worms and all that sort of thing, please tell me what to do. To many of your readers it will be worth the price of the PACIFIC RURAL PRESS many times to know what to do in this case.—JAS. MCKENZIE, Sebastopol.

This borer is found in nursery trees and more likely to be in two-year-olds than in yearlings, but the borer does not stay in the wood more than a year. The worms which you found last month must have entered the tree during the summer of 1899, and from what you say of the size, they are well along in their larval period. It would seem to be the conclusion that your trees got sunburned in spite of the cloth wraps. A good whitewash is better than wrapping. A whitewash which will stick on well is this: Lime 30 lbs., salt 5 lbs., tallow 4 lbs. If the tallow is stirred in while the lime is slaking it will readily become incorporated. Use water enough to make the wash flow well with the brush.

Capons and Caponizing.

TO THE EDITOR:—Is caponizing difficult, and can it be learned without personal instruction? Does the increased price of the product justify the risk and cost of the operation?—W. H. W., Morgan Hill.

Caponizing is not difficult if one has deft fingers and a careful, painstaking way of doing things. It is not an art for clumsy or careless people. It is possible to learn it without personal instruction—in fact, most caponizers are self-taught. Get a manual, like Greiner's "Capons for Profit," which is furnished from this office for 30 cents, buy a set of instruments described therein, study the matter carefully in print, study the structure of a dead cockerel until the location of the organs is further understood and then proceed with a live bird. Very few indeed need to be lost. As we have said, it is, however, a care-

ful and fussy piece of business and many do not like it. There is hardly any danger that the demand will be oversupplied. San Francisco market men say there is no lack of sale at \$10 to \$18 per dozen and upward perhaps, for it is not unusual for a choice capon to retail at \$4 at one of our swell city markets. Caponizing would be a good subject for discussion by our poultry readers. We are aware that many of them have tried it, but we do not know the conclusions to be drawn from their experience.

Apple Grafting and Apple Mildew.

TO THE EDITOR:—Would you advise grafting apple into large pear trees? We have some young apple trees—about seven years old—that are badly affected with a kind of mildew on the young growth, and as a general rule it kills the tips of the branches, if not the whole of the new growth. Is there anything we can do as a preventive?—A SUBSCRIBER, Watsonville.

Do not graft apples on pears. The grafts may grow for a while and in some cases they have actually borne fruit, but they will ultimately fail. It has often been tried and so far as we know always with the same result. Satisfactory treatment for the powdery mildew of the apple, which you have on your trees, is sulphuring the young growth as soon as the first sign of it appears. You can blow the sulphur on with a bellows with a long nozzle, or you can put sulphur in a cheesecloth bag at the end of a pole and shake the bag over the new growth, or hold the bag in place and thwack your end of the pole with a hammer so as to jar the sulphur out.

For the Canker Worm.

TO THE EDITOR:—When is the proper time to spray prune trees for canker worm? Would it hurt the coming crop to spray the trees when they are in bloom?—JOHN K. GARNETT, Calistoga.

We do not believe in spraying while in bloom if it can be avoided, though, if the spraying is properly done, the application going on the tree in the form of mist from a nozzle held at a distance away, there is very little danger. Spray with Paris green one pound to 300 gallons of water if the trees are peach, prune or cherry; pears and apples will stand one pound to 200 gallons. Look out next December and put the wire cloth traps on to prevent the crawling up of the wingless moth, which is the progenitor of the canker worm.

For Apple Scab.

TO THE EDITOR:—Is it advisable to spray with Bordeaux before apples and pears bloom, as well as after, for scab? They have been sprayed with lime, sulphur and salt.—E. H., Blocksburg.

The lime, salt and sulphur is a good fungicide, and if it was well made and well applied it ought to answer by itself for winter treatment for scab. You can take a second dash at whatever scab spores escape the winter treatment by using a combined Paris green and Bordeaux spray—one pound of Paris green to 200 gallons of Bordeaux. This will settle both the codlin moth and the scab, and should be repeated two or three times at intervals of three or four weeks. If, however, no signs of scab appear after the first treatment with the Bordeaux, use clear water with the Paris green after that to protect the late apples and pears from the worm.

The Mammoth Blackberry.

TO THE EDITOR:—Where can I get rooted "tips" of Judge Logan's new Mammoth blackberry vines? I have written to several leading nurserymen of the State for them, but they do not seem to know what they are.—C. A. BENSON, Kelseyville.

James Waters of Watsonville controls the stock of this berry by arrangement with the originator. We understand it is not to be had this year, as Mr. Waters proposes to have enough to go around when he does offer it to the public. We presume it will be first heard from in the advertising columns of the PACIFIC RURAL PRESS when it is ready for sale.

Peach Buds Dropping.

TO THE EDITOR:—Most of the Alexander fruit buds have dropped in this part. Is the cause known? Is there any way of preventing? The lime-sulphur-salt spray applied early in February is not effectual against it.—F. J. FITCH, Loomis.

If the buds have disappeared before opening into bloom the cause is probably the California linnet and the remedy is shooting or poisoning these destructive birds.

Whitewash for Fruit Trees.

TO THE EDITOR:—Some grafted plum trees were burned by last summer's sun, so I wish to whitewash the trunk soon to prevent damage. Spring rains would wash off most of a plain lime wash if applied now. Would melted glue mixed with the whitewash be a safe and effectual addition?—READER, Placer county.

Yes; a very good size can be made that way, but the salt and grease whitewash already mentioned on this page is generally used.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 19, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

SACRAMENTO VALLEY.

Warm, spring-like weather has prevailed during the week, the temperature averaging several degrees above normal, and conditions have been favorable for the growth of all crops and the development of fruit. Light rain fell Sunday evening and Monday morning. Grain is in excellent condition, and prospects continue good for an unusually large crop. Pasturage is abundant in all sections. Nearly all deciduous fruits are in bloom and advancing rapidly. There are complaints in some sections that apricots are dropping. Almonds, pears and prunes give promise of large crops, if not damaged by frosts. The new growth on orange trees is thrifty, and in some localities orange trees are in full boom, with prospects of a heavy yield.

COAST AND BAY SECTIONS.

Unusually warm weather has prevailed in most sections during the week, with no rain up to Sunday night or Monday morning, when light showers occurred. The ground has dried out rapidly in the northern counties, enabling farmers to resume the work of plowing and cultivating. Grain continues thrifty, and large crops of wheat, barley and oats are predicted. In some localities barley and oats have commenced to head. Hay and pasturage are looking well. Deciduous fruits continue to advance, and have not thus far been injured by frosts or winds. In the vicinity of Vacaville it is reported that the extremely warm weather, following the rain of the preceding week, has considerably injured apricots; there will be a good crop, however, of this and all deciduous fruits. Grape vines are in leaf. Cherries are in bloom in some localities, with indications of maturing early.

SAN JOAQUIN VALLEY.

Clear, warm days and generally foggy nights and mornings during the past week have been very beneficial to all growing crops. Farmers are busy following, and farm work of all kinds is well advanced. Pasturage is in good condition and plentiful. Haying will soon commence in some localities, with prospects for a large crop. Grain is well advanced, has a nice color and is growing rapidly. Apples, peaches, plums and pears are in bloom, and prospects were never better for a large fruit crop. In some localities the trees are beginning to leaf. No frost or injurious winds were reported. Light rain fell quite generally Sunday night and Monday morning, and while the amounts reported are not large, they were sufficient to freshen all vegetation. Hay continues to be shipped from the upper portion of the valley to Arizona.

SOUTHERN CALIFORNIA.

The warm, dry weather continued during the first part of the week, and was followed by cooler weather, with fogs and cloudiness in some sections and a trace of rain at Los Angeles. The latter conditions were favorable for grain, and in some localities the crops are said to be in fair condition, with prospects of a small crop if rain falls within a short time. In some sections, however, late sown grain is suffering, and will probably be a failure. Rain is badly needed in all sections. Haying has commenced in San Diego county. Nearly all citrus and deciduous fruit trees are in full blossom, and the prospects are good for a large yield. Irrigation water continues plentiful.

EUREKA SUMMARY.—Grain and pasturage on high lands are in good condition and making satisfactory growth; on lowlands the soil is wet and farm work is behind. Plum, quince and pear trees are in bloom. Orchardists are spraying.

LOS ANGELES SUMMARY.—Where not too far gone, grain received new life from the late rain and a week of damp, cloudy weather. A good rain within a week or two will insure fair crops.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, March 21, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Minimum Temperature for the Week.	Maximum Temperature for the Week.
Eureka.....	.50	43.65	28.90	34.85	46	56
Red Bluff.....	.38	18.81	15.35	20.72	48	52
San Ramon.....	.04	15.61	11.63	16.13	46	52
San Francisco.....	.17	17.02	10.73	18.87	46	59
Fresno.....	.04	7.06	5.36	7.35	46	78
Independence.....	.00	2.42	1.16	4.42	42	74
San Luis Obispo.....	.14	14.75	11.57	15.27	48	72
Los Angeles.....	.1	5.55	4.76	14.59	50	74
San Diego.....	.02	3.14	4.53	8.20	52	64
Yuma.....	.01	0.76	1.34	2.72	50	84

STATE BOARD OF AGRICULTURE.

California Agriculture in 1899.

NUMBER III.

Report of the State Board of Agriculture, specially furnished for advanced publication in the PACIFIC RURAL PRESS.

CITRUS FRUIT.

The growing of citrus fruit in California is now a very extensive and well established industry. We lead all sections of the United States, and our orange and lemon crop is now the most extensive factor in the Eastern market. The severe cold which prevailed in Florida in 1896 and destroyed so many of the groves in that State, gave a cleared field to the citrus product of California. For this and other reasons, favorable prices have prevailed during recent years, and the season of 1898-99 was a profitable one. The unusual drought of 1898 was a serious menace, but sufficient irrigation was developed to preserve the orchards and mature a good crop. The crop of the season of 1899-1900 has not yet all been harvested, but promises to be much in excess of the previous year. Considerable uneasiness is felt by our citrus growers over proposed reciprocity treaties admitting to competition with them the products of Cuba, Puerto Rico and Jamaica. A serious obstacle to the movement of the citrus crop of this season, from the southern counties, has arisen and is still pending in the shape of a contention between the growers and the transportation companies over the right of the former to control the routing of their fruit. If this dispute continues at this critical time, great loss will result, and it is to be hoped that the controversy will reach a speedy and just settlement. The planting of orange and lemon trees during the last few years has been very active, this being especially true of the recent planting season. This industry may safely be said to be in a healthy condition, and the planting of good varieties on soils suitable for that purpose promises to continue profitable. The Navel orange, which grows to such perfection here, is one of the very best grown and is a standard variety for which there is always a good demand at good prices.

The following table shows the citrus fruit shipments from California since 1890:

CITRUS FRUITS—ORANGES AND LEMONS.

Season.	Carloads.	Boxes.
1890-91.....	4,016	1,325,000
1891-92.....	4,400	1,452,000
1892-93.....	5,871	1,972,500
1893-94.....	5,022	1,687,500
1894-95.....	7,575	2,545,200
1895-96.....	6,915	2,323,500
1896-97.....	7,300	2,649,600
1897-98.....	15,400	5,174,400
1898-99.....	10,875	3,654,000

To the foregoing figures for 1898-99 should be added about 400 carloads shipped by steamer to coast points, 239 cars shipped from Butte county and 285 cars from Tulare and Fresno counties, making a grand total of 11,275 cars as the total crop of California for that season.

The crop of the season of 1899-1900 is of excellent quality and the largest yet produced in this State—estimated variously at from 14,000 to 18,000 carloads, 15,000 probably being a safe figure. Statistics are not obtainable to show what part of a crop is oranges and what part lemons. Of the crop of 1898-99 the best figures attainable place the lemons at from 800 to 900 cars out of the total shipped, with the probability in favor of the latter amount. This same proportion will probably prevail for the season 1899-1900.

OLIVES, FIGS AND NUTS.

These crops are grown here very extensively and to a high degree of perfection. Our State Board of Horticulture treats more particularly on these products, and we will here only call attention to the extent to which we produce them, and the excellence which they attain when grown in this soil and climate. There are probably more than 20,000 acres planted to olives in California, including all of the standard varieties, and it is estimated that over \$5,000,000 are invested in this industry in the State. The manufacture of oil from olives has with us for some time been reduced to a practical business basis, and our oil is sold as a high-class product in all of our American markets. The absolute purity of California oil, combined with the acknowledged cleanliness of its manufacture, should and probably will procure for it the best markets and the highest prices in this country. In pickled olives our growers have done little in the way of producing the green pickled olive of the imported variety, but the pickling of ripe olives has already reached large proportions. This product is constantly growing in popularity and a large portion of our crop bids fair to be so utilized.

There are about 3000 acres planted to figs in California, and, although this fruit has been neglected in favor of other varieties, its cultivation has reached considerable proportions, the dried crop for 1899 being estimated at about 150 cars for Eastern shipment. Some fresh figs are annually shipped East,

amounting for 1899 to three or four cars. Fig trees take longer than other fruits to mature, but require less cultivation and continue to bear indefinitely, the yield increasing with the size of the tree.

In the production of almonds and walnuts we have long since been prominent, and without doubt will soon produce sufficient of each to supply the entire trade of the United States. Nearly our entire crop of walnuts is grown in the southern portion of the State, while our almonds are mostly all grown in the central portion. The growers of these nuts have mostly organized into associations, through which they co-operate for the sale of their product. This method has proven satisfactory, and this business is on a profitable basis. The nut crop of California for 1899 was very good—in walnuts exceeding the crop of 1898, and in almonds being probably the largest yet produced in the State. The following table shows our entire product since 1891, very clearly illustrating our rapid growth in this production:

ALMONDS AND WALNUTS.

Year.	Pounds.
1891.....	2,624,000
1892.....	4,016,000
1893.....	3,586,000
1894.....	7,930,000
1895.....	6,470,000
1896.....	11,440,000
1897.....	12,720,000
1898.....	12,200,000

WINE.

The price at which our wine grape crop of 1899 sold was most satisfactory, and the manufactured product sold for a fair price. The industry, however, is in an unsettled condition and several important ends must be accomplished before the business can be said to be on a satisfactory basis. The California Wine Makers' Corporation, which was intended to represent the growers and manufacturers, has gone out of existence, leaving them without any organized representation. This is a distinct loss to the great movement towards co-operation and association which seems to be necessary to the prosperity of our chief agricultural industries. Adulteration prevails on a very extensive scale throughout the United States, and the artificial or sophisticated article competes with the honest product. This should and can be stopped by State and national legislation, which we cannot too strongly urge.

Phylloxera has attacked our vineyards and has made extensive inroads upon them. It is doubtful if the spread of this disease to susceptible vineyards can now be checked. In its inception it might have been by some such stern legal regulations as prevail in the great Algerian vineyards under the control of the French Government. It originated in the large wine producing sections of Sonoma county, where, owing to the conformation of the country, it spread very slowly but surely until nearly every district in that section has been attacked. In the great wine district of the Santa Clara valley it first became apparent in 1897, but, conditions favoring its spread, it is at present widely distributed and has materially reduced the wine product of that section. Many portions of the State suitable for growing wine grapes are entirely free from this disease, and might so remain indefinitely, but it appears very inadvisable to hereafter plant vines except upon resistant stock. Many varieties of resistants are known and their adaptability to various localities can be accurately determined. From every indication it seems that the planting of wine grapes of good varieties on well-selected resistant roots is advisable and should be profitable. There is abundance of suitable land in the State, much of which can be purchased at a very low price. In fact, the wine product is best from what is for other purposes regarded as poor land.

The following table will show the wine product of California, commencing with 1892:

CALIFORNIA WINE PRODUCTION—DRY AND SWEET.

Year.	Gallons.
1892.....	15,000,000
1893.....	22,700,000
1894.....	16,000,000
1895.....	14,000,000
1896.....	13,500,000
1897.....	34,000,000
1898.....	18,529,000
1899 (estimated).....	14,000,000

Of the crop of 1898 about 10,750,000 gallons were dry wines and 7,779,000 sweet. Of the crop of 1899 about 9,000,000 gallons were dry wines and 5,000,000 sweet, embracing, in the order of their importance, Port, Sherry, Angelica and Muscatel. When the vineyards which have been planted on resistant stock commence to bear our wine product will again increase.

(TO BE CONTINUED.)

THE following are the barometric pressures at different altitudes: Pressure at one-quarter mile above sea level, 14.02 pounds per square inch; one-half mile, 13.33 pounds; three-fourths mile, 12.66 pounds; one mile, 12.02 pounds; one and one-quarter miles, 11.42 pounds; one and one-half miles, 10.88 pounds; two miles, 9.88 pounds.

THERE are 371.25 grains pure silver in an American silver dollar. To every \$2000 silver coined in the U. S. Mint is added one pound of copper. There are 23.32 grains pure gold in an American gold dollar.

THE FIELD.

A Dust Mulch.

TO THE EDITOR:—Some years ago I had finished plowing, harrowing, cultivating and clod-mashing my prune orchard and had it "laid by" for the season, as I thought it was very doubtful if any more rain would come, but in this I was mistaken—down it came in good earnest and I knew I would have the work to do again in order to get entirely rid of the weeds. In due time I harrowed about two-thirds of my orchard, but the rest of the land continued wet so long that before it was just in the right condition to work the weeds completely covered the ground and were from 4 to 6 inches in height, altogether too large to kill by harrowing.

A WEED KNIFE.—I had a one-horse John Deere cultivator and I knew by past experience that it would not entirely destroy the weeds even by cultivating several times both ways and therefore I had a blacksmith make me an adjustable weed knife 3 feet in length which was the greatest width that I could extend my cultivator. I gauged this knife so it run about 4 inches deep and it not only took every weed, but left my ground very mellow and in very much better condition than I had ever seen it before.

I therefore concluded to go over the rest of the orchard with this cultivator and knife attachment, and by so doing had my ground in what I called first-class condition, not little hard ridges that before were always left between where the cultivator teeth run, but every inch completely shaved.

After this ground was clod-mashed I had the satisfaction of knowing that I had at last got a dust mulch that would be of great service, as it would retain a large quantity of the moisture acquired during the winter months and so in a great measure prevent its evaporation.

Later on I was so greatly pleased with this dust mulch that I determined to treat my melon patch of two acres in the same manner, although there were no weeds on it, but I thought I would get well repaid for my extra labor.

THE RESULT.—Although the season proved to be an unusually dry one for this part of the country, I had the largest crop of melons that I ever raised. I am fully satisfied that my enormous crop was owing in a great measure to most thorough and intense cultivation as before described, and I shall continue to use the knife attachment on my cultivator, not only in my orchard but in my melon and squash patches.

START THIS DUST MULCH EARLY.—This dust mulch should be started early in the spring, before a large portion of the moisture has escaped; if put off until the surface of the ground becomes firm, set and dry, it will do but little if any good. Never let the grass and weeds get a start, if possible to avoid it, only during the winter months; let them grow then, as they are valuable to turn under, for they add some fertility as well as needed humus to the soil, but be sure and turn them under. In my observation for many years past I have seen only a very few men who do what I call first-class plowing, especially where the ground is pretty rank with weeds and grass. In order to do complete work a heavy chain is needed to drag the weeds down, then use a large plow and plow deep.

HUMUS.—Humus is very essential to the growing of good crops of any kind, and it is not only needed in the soil of this part of the country where the land has been continually cropped for over forty years, but in many other portions of our State.

RAINFALL.—Up to this date we have had here nearly 36 inches of rain, and I find by figuring that over 35,000 tons have fallen on my place of twelve acres. Notwithstanding this fact it will become necessary for me to take extra precaution that the ground does not become too compact before plowing, cultivating, etc., especially if we are to have but little more rain this season, but I have no doubt but that we will have refreshing showers at short intervals for some time yet.

IRA W. ADAMS.

Calistoga, Cal., March 15, 1900.

Alameda County Vegetable Growing.

The vegetable-growing interests of Alameda county are very large and varied. The Oakland Enquirer says that an unusually large area is to be cultivated in vegetables this season.

In Eden township great fields which have heretofore been sown to grain or used as pasture land are being plowed and harrowed and will be set out with tomatoes, of which the local canneries will consume hundreds of tons. Peas and asparagus are also grown largely for canning and large areas are put out to beets to be worked up at the sugar factory at Alvarado. About Pleasanton hop growing has become an important and profitable industry.

About the first vegetable to be placed on the market of local production is rhubarb or pie plant. Already several hundred boxes of it have been shipped to San Francisco, where there is a good and ready market for it. As yet there has been no shipment

of rhubarb to the East, but there probably will be in a few days. The largest growers of rhubarb in this county are E. B. Stone, who has sixty acres planted to it, and H. W. Meek, who has a patch of one hundred acres planted. Many carloads were sent East last season and the experiment made of shipping it even to Manila.

Fully 1000 acres are to be planted to tomatoes this year. At least 75% of this acreage has already been contracted for by the California Canneries Association. At present the tomato plants are being grown in covered houses. They will not be set out for several weeks. A. S. Vager has sowed tomato seeds over 9450 square feet of space. This, he believes, will give him enough plants to set out 250 acres. Among the others who are to grow tomatoes extensively this year are C. M. Buck, who will have 100 acres; H. S. Kinsell, with 150 acres; Stenzel Bros., 150 acres; H. W. Meek, 100 acres; Chas. Cross, 50 acres; Frank Williams, 60 acres; J. Cunha, 20 acres.

Many acres are to be cultivated in peas, which are a profitable product of Alameda county. A. S. Vager will have 58 acres of this vegetable; H. Martin, 40 acres; C. M. Buck, 30 acres. The peas have already been planted and in some places are now two or three inches high.

A. Jones, a wealthy resident of Eden township, has surprised many of the growers by announcing that he is to plant 100 acres with cucumbers. They find a ready market at the pickle factories in this city and San Francisco. Several other growers will have large patches. Stenzel Bros. are to have 30 acres; H. Kinsell, 15 acres; J. Cunha, 12 acres; A. S. Vager, 35 acres.

The acreage which is given in the foregoing paragraphs is an estimate which may be changed by the growers as the season advances.

Asparagus is being grown extensively in the vicinity of Warm Springs.

The horse bean, which was quite largely grown last year, is not popular this season, and not over 100 acres of the vine is to be planted. J. B. Mendonsa has 30 acres and Tony Dias 20 acres. These are the largest growers of the bean.

Market gardening of vegetables is done largely under irrigation and this insures crops in all seasons.

The outlook for berries is excellent. Currants and gooseberries are grown extensively in this county and strawberries to some extent.

The prospects are first rate for cherries, apricots and almonds.

If no late frost or other unforeseen accident occurs, there ought to be a prosperous year in Alameda county. Good crops mean abundant employment for labor, money in circulation and good times for the merchant and manufacturer. The crop conditions in Alameda county indicate to what a large extent the prosperity of any country springs from the soil, and in matter of soil and climate, admitting of a variety of profitable products, Alameda county is not surpassed by any in California.

THE APIARY.

What to do for Bee-Stung Stock.

Prof. A. J. Cook of Los Angeles county gives the American Bee Journal a very interesting letter on this subject, which some of our readers may some day have cause to remember.

A COW STUNG TO DEATH.—Mr. Clark, of San Bernardino county, Cal., has had for a good many years a large and very profitable apiary. There was a spring situated some distance to the west of his apiary in the canyon. He had a fine Jersey cow which he used to picket out to feed. The forage was especially good between the apiary and this spring. Mr. Clark observed that the bees were flying toward the spring for water in great numbers, yet the good feed tempted him to picket the cow on this line, as the apiary was some distance from the place, and he apprehended little or no danger. Yet the fact that there were so many bees did raise a question in his mind, but not knowing that cattle were unlike horses, he picketed the cow slightly, so she could get away in case of an attack. At night, when Mrs. Clark went to get the cow, she was cold in death, and a great many bees were dead around her.

A COW WILL NOT RUN.—There are several facts in this account that I think are of special interest, and should be noted by all bee-keepers. The first, that the instincts of the cow when she is stung will not lead her to run away as would be the case with the horse, and she stands by until stung to death. Mrs. Clark told me the cow was very close to where she was picketed. She had pulled the stake up so she could have run away if she had been so disposed. Again, the fact that the attack was so general that most of the colonies in the apiary were very much depleted in numbers.

Every apiarist has observed that when one bee stings, others, maddened by the odor of the poison, join in the attack. But I should not have expected that all the bees of the apiary would thus become so demoralized as seems to have been the case in this experience of Mr. Clark's. I do not think I should have hesitated to have picketed the cow at this place, but

I can see now that it would be dangerous. I should have expected the cow to run away, and should not have looked for such a general attack. The fact that the bees were going en masse to and from the spring would, of course, tend to make any attack a general one, and that seems to have been the case at the Clark's. The loss was heavy, for not only was the cow killed, but the apiary was seriously injured by the loss of a great number of bees.

TREATMENT.—This is the first time that I have ever known of a cow being attacked in this way. I have known several cases of horses. Some years ago Dr. Southard, Michigan, had an accident of this kind. His team ran away and went dashing into the apiary, which was situated in a grove. Of course, the horses struck the trees and were thrown down, and as the bee-hives were turned bottom side up the horses were terribly attacked. Dr. Southard, being an experienced bee-keeper and also a physician, knew just what to do. He at once liberated the team and led them to the barn, and covered them with blankets which were kept wet with cold water. Although the horses were terribly stung, both of them recovered.

Here, then, we have another point that is worth remembering. Of course the inflammation and congestion consequent upon so many stings would be terrible, and anything that would lessen it should be done. The blankets constantly wet in cold water would be one of the best agents to accomplish this. If Mr. Clark had discovered his cow at the beginning of the attack, and had led her into an enclosure, the bees of course would have at once left and would have ceased the attack. If this had been followed by the use of the wet blankets very likely the cow's life could have been saved, even though she might, at the time, have received thousands of stings.

I was once stung quite seriously myself. Over eighty stings were taken from my face, but by taking means as above to counteract the congestion, I suffered no serious harm, though I hardly need say I was not exactly comfortable for two or three days.

Bee Men Organize.

TO THE EDITOR:—The bee keepers of the San Joaquin valley, recognizing the advantage arising from co-operation, met in Justice Tucker's office in Selma, Fresno county, March 12, 1900, and formed a State organization under the State law of 1895, whereby each member has but one vote, whether he has 10 or 1000 hives.

The qualification for membership is the ownership of ten or more colonies of bees and a compliance with the constitution and by-laws of the organization. There is a membership fee of \$2 and no dues nor assessments. The organization will be known as the California Bee Keepers' Association. We hope to get every bee keeper in the State to join us.

OBJECTS.—We will endeavor to run the business along the same lines as the raisin growers. We have adopted their by-laws as nearly as we could make them apply to our needs, and if we can succeed in getting 60% of the bees in any county or locality subscribed there will be a district formed in that county and conducted the same as the prune or raisin growers manage their affairs.

OFFICERS.—The following named members were elected temporary officers: J. P. Johnston of Fresno president, M. A. Gilstrap of Selma secretary, J. W. Payne treasurer, J. P. Johnston, J. F. Crowder, J. W. Payne, B. D. Vanderburgh and W. M. Grimes directors. M. A. Gilstrap was chosen secretary of the Board and B. D. Vanderburgh corresponding secretary. Messrs. Johnston, Payne and Crowder constitute the executive board. They were instructed to purchase a dipping tank and boards and a foundation press and ascertain the cheapest and best place in the State to buy supplies for the members.

EARLY RESULTS.—The advantage of co-operation has already been demonstrated by an offer of ten-gallon cases and cans for 10 cents a case less than they had been offered before this organization existed. Not only that, but foundations can be furnished at Selma to the members at 30 cents per pound, instead of 50 cents, which was the former ruling price. A cordial invitation is extended to every bee keeper in the State to join us in trying to maintain a price for our honey that will at least justify us continuing in the business, and also enable us to get our supplies at a reasonable figure. As soon as our charter comes there will be a meeting of the members called to complete the organization and elect permanent officers, and by that time our executive board will have everything ready for business.

B. D. VANDERBURGH,
Corresponding Secretary.

TO FIND the horse power necessary to elevate water to a given height, multiply the weight of the water elevated per minute by the height in feet and divide the product by 33,000 (an allowance should be made for water friction and a further allowance for losses in the steam cylinder, say from 20% to 30%).

THE horse power of a water supply may be approximately determined: multiply number of gallons per minute by pressure in pounds per square inch, and divide product by 1500. "Pressure in pounds per square inch" is found by multiplying number of feet fall by .433.

THE IRRIGATOR.

Building a Farm Reservoir.

C. M. Hatch gives the Tulare Register a very timely letter on the rise of the small reservoir in irrigation and the way to make such a receptacle. Mr. Hatch rightly believes that as some farmers and fruit growers are already pumping water for irrigation, and others will soon have to, a few suggestions from his own experiences in building and using reservoirs might be of some use to those who intend to irrigate from wells.

THE USES OF THE RESERVOIR.—By the use of a properly constructed reservoir the cost and labor of irrigating can be very materially lessened. In the first place care should be taken to locate it on the highest available and suitable ground and to have it substantially built, and large enough to hold all the water you can pump in not less than twenty-four hours, running night and day. When filled you can run a good head out for five or six hours with the advantage of a head of water at least three or four times as large as you can pump direct into your ditches.

Another advantage is: That most everyone has ditches and checks already constructed for irrigating from canals which are too large to pump into directly but can all be used with a reservoir and save the cost of rechecking and ditching.

Still another advantage is in being able to shut down your reservoir gate and save water if your ditches or checks break or need repairing and your pump can be also kept running. It can be readily seen that with a chance to store your water for twenty-four hours or more, two men to handle the water can do the work of four or five without a reservoir, as they could have one-half of their time each day to check and prepare their ground for irrigation and the two men at night would not be needed. To do all this you must have a good reservoir, which I claim can be built by most anyone if he will carefully follow directions.

TO BUILD A RESERVOIR.—Select a good site on your highest ground and as near your well as possible to find good soil to locate it on, heavy clay soil being the best for the bottom and banks. Avoid sand streaks or very sandy land, as you must make your reservoir hold water, without much if any seepage. Having selected a suitable location stake out your reservoir, not less than 200 feet square, then plow as deep as you can a strip 24 feet wide all around the 200 feet square for the base of your banks. This plowing must be deep enough to plow out all old gopher or squirrel holes. In building your banks get all your dirt from outside your reservoir, as you want it when completed, so you can draw off all the water and have it dry enough to plow for the purpose of puddling and killing the vegetation.

Build the base of your banks the full width of your plowing and do it all with a four-horse Fresno scraper, hauling your dirt lengthwise of your banks, and thus packing all the dirt you haul on with your team and loaded scraper. Build your banks at least 6 feet high and about 6 feet broad on top. This will make a bank with a 3-foot base to 1 foot perpendicular which is about the right proportion to stand well and not slide in when first filled with water. Put in as many gates as you need to run the water into your ditches, generally two, one on the west and one on the south sides.

I have found open gateways the most convenient as pipes and trunks covered up in the banks are hard to clean out when obstructed. Having completed your reservoir banks and gates plow the bottom of it thoroughly and pump in about 1 foot deep of water and take four horses abreast and drag a wide brush or harrow over the bottom until thoroughly puddled. A day is none too much time to do it in. If at any time it gets to leaking too much renew the above puddling and it can be made so as to lose very little water if any.

A reservoir built as above will contain very closely the area of a square acre, nearly 209 feet square and filled 5 feet deep with water will contain 1,633,782 gallons and it would take an 8-inch centrifugal pump throwing 1000 gallons a minute, twenty-seven hours to fill it.

Irrigating Alfalfa.

On the west side of San Joaquin in Stanislaus and Merced counties, and farther south, the areas of alfalfa are broad oases during the dry season which attract the attention of all who fly through on the trains. The Los Banos Enterprise gives an interesting paragraph on laying off land for alfalfa and emphasizes the advantage of beginning properly.

THE OLD WAY.—In early times our farmers would make great, square checks, taking in several acres of land. Immense volumes of water would be turned in, and frequently the water along the lower side of the check would be over a foot deep, remaining on the alfalfa for hours at a time and killed it. In order to make these great checks the top soil, the best of the land, would be taken off a large por-

tion of the ground and piled in big levees where nothing could grow, and the land where the sub-soil was taken from would require two or three years of exposure before it would hold a good stand of alfalfa. The levees would be so high that a man could scarcely get over them with mower or load of hay.

THE NEW WAY.—The new system is quite different. The first thing is to get your land surveyed. It cuts no figure how irregular the checks are in shape, but levees should be low and quite wide, so alfalfa can grow to the top of them and so a mower can pass over them easily. Checks should be small, so that you can rush the water over them and right off. If you let the water stand still on alfalfa for a few hours on a hot summer day, it will scald it. The checks should be so arranged that, when flooded, water is not more than 4 inches deep in any place, as a larger volume of water will often drown it out. Make your checks so but little dirt is to be moved; by doing so you avoid much hard work, and leave the land in better shape. They should not be level, but slant a little in order to drain well—the side the water comes in should be 3 or 4 inches higher than the one it is taken out. Alfalfa will die where water is allowed to stand.

THE POULTRY YARD.

Progress of the Poultry Interest.

TO THE EDITOR:—There is no diminution in the interest taken in poultry raising by the residents of our State. Rather, there is increased activity in this pursuit. The demand for thoroughbred fowls and eggs this winter and spring has equaled, probably surpassed, that of any previous season. The sales of incubators have been larger than ever. Evidently there are many new recruits in the business, who will have much to say at the close of the season of their experience.

Better poultry and more of it is a good motto to have in mind. Evidently there is a growing disposition on the part of many poultry raisers to raise the better grades, whether it be of the Asiatic or the Mediterranean breeds. This is as it should be. A trial will demonstrate to the doubtful that standard-bred fowls are preferable to the mixed mongrel flocks often—most always—seen upon our farms.

In the States to the East—in the upper Mississippi valley and in the Middle and New England States—there is a marked increasing interest in pure-bred fowls. Hundreds of men and not a few women are profitably engaged in the business there. The principal breeds raised there are Plymouth Rocks, Wyandottes, Leghorns, Minorcas, Brahmas, Games and Cochins. The Eastern market demands a brown egg—the darker the color the readier the sale and the higher the price—and many breeders have this fact in mind when they mate their fowls. But in California this matter is reversed. The large, white egg commands the best price. Consequently, with us the Leghorns and the Minorcas lead for eggs.

All through the Eastern section of our land new incubator factories are putting on the market their goods. The competition is so great as to serve a double purpose: machines must, to find ready sale, be as nearly perfect as possible; improvements are being made constantly, and now not a few novices, if they have good common sense and follow directions, are quite successful. But one need not send far for up-to-date incubators and brooders, for they are made in large numbers within the borders of our State. Because of competition, these machines are cheaper than ever.

In the East the White Wyandotte is crowding the long-time Plymouth Rock hard. The former bird is deservedly growing in popularity. Here, at home, there is increasing demand for this fowl, and calls for incubator lots of eggs are frequent. It is often said that fads in fowls come and go, but we are inclined to think that this growing demand for the snow-white Wyandotte will increase to large proportions and that it will be permanent, for they come as near being an "all-around" fowl as has yet appeared, making unsurpassed broilers, and, when older, are likewise among the best fowls for the table. Another thing in their favor: they are excellent layers; but they lay a brown egg, and, of course, this would be one objection to many.

Thousands of chickens will be hatched in this State this month and next. There is an old adage that says "one must not count his chickens before they are hatched." True it is that the full degree of success in hatching is not reached where use is made of the hen or of the incubator. One might say, "Don't count your chickens until you have raised them," for many die in their infancy and not a few in their youth.

Hatching chickens is but the prelude of a long time of watchful labor. There is very much to be guarded against, much to do, constant care; yet the secret of raising healthy, strong chicks will be revealed to the patient, care-taking man or woman who turns his attention this way, and what was once a vexatious and profitless pursuit may become a remunerative and pleasant avocation.

Napa, March 17.

A. WARREN ROBINSON.

THE DAIRY.

Raising Calves Without Milk.

This is a question of constant interest in commercial dairying and discussions of it are timely. C. L. Gillingham, a New Jersey dairyman, gives the Rural New Yorker the results of his experience. Where he speaks of clover hay many Californians can read alfalfa hay, while in some parts of the State both the Eastern clover and timothy are grown.

WHAT WE FEED FOR.—The question is often asked, Can the heifer calf be raised into a profitable dairy cow without milk? We might answer this with a simple yes; with little, if any, milk after two weeks of age, and not a drop after one month, and will thus make a far more profitable cow than if allowed all the milk it can consume in the early stages of its existence. What do we want to do with this little dairy animal, and what do we want her to do for us when she reaches maturity? Do we want her to convert her food into meat, and place a large amount of it upon her carcass, or do we want her to place it in the milk pail and churn for our profit? If the latter, we must begin to train and educate her for her life work the first three months of her life.

MILK VS. FLESH.—If she is allowed to have all the good milk she can consume, and in addition is fed on timothy hay and corn meal, you will so educate her to store up fat that when she reaches maturity she will say to you, in actions, if not in words, "You taught me while a baby to make fat, and now I have become a cow I cannot help it," and will use the majority of the feed you give her to increase her carcass. Every good dairyman knows this is always done at the expense of the milk flow, and she will be utterly worthless as a profitable dairy animal. If, on the other hand, we feed them on foods rich in protein, foods that will make muscle and sinew, growth only, and not fat, with a considerable amount of coarseness, to develop a large stomach, to hold a large amount of food, to be ground up and assimilated for our profit in after years, we shall be starting in the right direction. This can be done by those who sell all their milk from the farm daily as cheaply as by those who make butter and have an abundance of milk, and the most profitable animals in our dairy are those which have had but little milk till they were two weeks old, and not a drop after the first month.

THE CALF'S GRUEL.—The proper plan is to remove the calf from the dam as soon as the milk is fit to use, and give it, for the first week (or until it has forgotten its mother and has learned to drink well), from one to one and one-half quarts of its mother's milk, according to size of calf, thrice daily, being careful never to overfeed it, keeping it a little hungry rather than otherwise. In a week or ten days reduce the milk and add to it gruel made of wheat flour and flaxseed jelly, gradually increasing the gruel, and decreasing the milk, until at three or four weeks of age you can dispense with milk entirely, and the calf will never know when it was done. This flaxseed jelly is made by boiling whole flaxseed in six times its bulk of water over a slow fire, until all the water is absorbed, and when cool it will be in a thick jelly. Make the gruel by damping from two to three tablespoonfuls of flour and then scalding it; add one or two tablespoonfuls of jelly, and you have a rich gruel, which can be thinned to the consistency and temperature of new milk, and will be greatly relished by the calf. Increase the amount of flour and jelly as the calf increases in size and age. If one is raising but one or two calves, and can conveniently make hay tea with which to scald and thin this gruel, it will be all the more relished by the calf, and will make her grow the faster. I would rather have this with which to raise a dairy calf than the richest milk I ever saw. To make it, place some good sweet clover hay in a kettle, fill it with cold water and place it on the back of the kitchen stove and let it steep all night, and you will have a rich tea that will contain all the aroma of the clover. This system of feeding, by being careful not to overfeed, will give the calf a tendency to eat hay and other feed quite young. This it should be encouraged to do by giving it free access to good clover hay, not timothy, as it will not eat enough of the latter, but with the former will develop a large stomach and become what we term pot-bellied. We have, when we were so unfortunate as to lose our clover crop, and had no other hay than timothy, bought clover from our more fortunate neighbors, especially for our calves, and found it to pay us well.

DRY FEEDS.—Shortly after the calf begins to eat hay it will also eat feed if placed in a box where it can reach it. This should be composed of four pounds of wheat bran, four pounds of ground oats and two pounds of linseed meal, giving the calf all it will eat clean at each meal, and after it eats this readily the jelly may very largely be left out of the gruel; yet it will do the calf no injury to continue with both. At the age of three months the gruel can be entirely dispensed with, feeding only on the clover hay and protein foods, or good pasture in its season, with pure water to drink. Calves fed on this system, particularly in the winter, will not present a very hand-

some appearance, for they should be pot-bellied, and in winter, from the lack of fat, nature places upon them long hair to keep them warm, which also detracts from their beauty, yet every intelligent dairyman knows this calf is the kind that will make the profitable dairy cow.

After reaching the age of a year or more this condition will gradually leave her, and she will begin to assume the shape of the dairy animal. The pot-bellied condition has appeared, and she has stored upon her system not fat but flesh and muscle, which she will need to draw on after her life work begins. Let this heifer begin her work at the age of twenty to twenty-four months, feeding her well when not on pasture or dairy foods, with no fattening ration, and one month before she is expected to drop her calf, unless upon pasture, feed her two quarts per day, in connection with her coarser foods of hay and fodder, of the same mixture of oat, bran and linseed recommended for the calf, which will distend and develop the udder and encourage large capacity for milk. She should come into profit the shape of a mature cow, wedge-shaped, udder developed and ready for work. Every dairyman should know how to handle her to make her profitable for years, barring accidents, and when he calls on her for business will find her to respond in the pail and churn, instead of upon her carcass at his expense.

In raising the bull calf, from which you expect to raise dairy cows, raise him exactly as this heifer has been raised, and he will transmit those qualities to his daughters, and these good tendencies at the pail will be intensified.

HORTICULTURE.

Coal Tar for Tree Wounds.

TO THE EDITOR:—So far from coal tar being detrimental to trees, I find the statement in the "Year Book" of the Agricultural Department for 1895, on page 266, that "burned coal tar" is "the best protection against the starting of rot in wood." "Large wounds should have the exposed surface protected by grafting wax, grafting clay or burned coal tar." On page 267: For "surface wounds in the trunk or large limbs, if they do not extend through the cambium, grafting clay or grafting wax may be used as a dressing, though the thick coal tar is just as good." If coal tar is put on soon after the limb is cut no rotting will occur.

On page 268: "Coal tar * * should be applied to wounds after they have been cleaned, pared and allowed to dry enough so that the material will stick. Thick tar is one of the most easily applied and best dressings there is. In Florida the coal tar is thickened by burning it in an iron kettle until it reaches the desired consistency. It is painted on the wounds while still slightly warm. Thus prepared, it dries quickly, forming a hard, glazed surface, which does not crack or peel off, as is the case with pitch, shellac, varnish, paint, etc."

Mr. Daniel Snively kindly brought me the Year Book from which I supply this official endorsement of his practise. I suppose "that settles it."

EDWARD BERWICK.

So far as application of coal tar to amputation wounds and bruises from other causes is concerned, we are not aware that there has ever been any question about it. It has been in use on the grounds of the University of California for twenty years to our knowledge, and cuts on oak trees a foot in diameter are healing over nicely without checking or rotting of the exposed wood. The present question, we believe, relates rather to the use of coal tar on peach bark to repel borers, and that, too, we believe can be safely done where the increased heat of a black surface does not cause sunburn.

French Prunes on Peach Root.

TO THE EDITOR:—I have quoted Mr. Daniel Snively of Guberville as an authority on coal tar; now I want to show some of the producers of small prunes what can be done by an intelligent grower even in a dry year.

It is the quality of the crop to which I desire to draw attention. From sixteen and one-half acres Mr. Snively's account with West Side Fruit Growers' Association reads as follows, dated Nov. 1, 1899:

	Pounds.
30-40.....	4,350
40-50.....	22,978
50-60.....	6,925
60-70.....	1,223
70-80.....	528
80-90.....	429
90-100.....	47
100-120.....	50
120 up.....	122

Net weight..... 36,652

Who can show a better quality record? And quality is what pays. One hundred and twenty-four tons of green prunes have been grown from eleven and one-half acres of same patch in a good season.

EDWARD BERWICK.

Agricultural Review.

BUTTE.

FLOUR MILL BURNED.—Biggs Argus, March 16: A fire destroyed the flour mill at Durham belonging to Wm. M. Taylor. The building was a two-story frame structure, and was equipped with modern machinery. The loss is estimated at \$16,000. Mr. Taylor intends to rebuild.

PRODUCTIVE ORANGE GROVE.—Oroville Mercury: At the annual meeting of the Oroville Citrus Association held recently, another dividend of 10% was declared. This makes \$8000 which this corporation has paid in dividends within a year. Pretty good yield for an investment of \$24,000! The Oroville Citrus Association planted the first orange orchard, intended for an investment, in northern California. They originally paid in \$20,000 and later paid in one assessment of \$4000, making the total investment \$24,000. They planted twenty acres at first, and to-day have sixty acres in Navel orange trees, a portion of which is not yet in bearing. The property is worth \$80,000, and pays 10% on that valuation. Oranges, it will be seen, pay well. It must be added that a sufficient cash balance is retained to meet operating expenses for the present year.

COLUSA.

GRAIN DROWNED OUT.—Colusa Sun, March 14: The break in the levee is now about 300 feet wide, and we are informed that the water escaping during the present rise covers about 4000 acres of land. Something like half of this was planted to grain after the January rise, and, as this is all small, the major portion of it will be killed. Wheat will stand a great deal of flooding in the winter when the weather is cold, but a very small amount of water kills it in the spring when the warm days set in.

FRESNO.

PLANTING WINE GRAPES.—Reedley Exponent, March 15: Much work in vine planting has been done in the Carmelita country this year. W. L. Hobler of the St. Maria Vineyard has put out twenty acres of vines; C. O. Minkler, fifteen acres; G. W. Hopkins, thirty acres; Miss Carrie Weaver, forty acres; the Carmelita Vineyard Company, eighty acres, and M. Samuel, 120 acres. Nearly all of the above are wine grapes.

APIARISTS FORM A STATE ASSOCIATION.—Fresno Republican, March 15: A State organization called the California Beekeepers' Association was organized in Selma Monday, writes B. D. Vanderberg. The meeting was called to order by J. P. Johnston of Fresno. The association was organized by the election of the following directors: J. P. Johnston, J. E. Crowder, I. W. Payne, W. M. Grimes, B. D. Vanderberg; W. A. Gilstrap, secretary of the association, was chosen secretary of the board, and B. D. Vanderberg was elected corresponding secretary. Messrs. Johnston, Payne and Crowder constitute the executive board. They were instructed to purchase dipping tanks, boards and foundation press and ascertain the best place to buy supplies for the association. The fruits of organization are already made manifest by an offer of cans and cases for 10 cents each less than they had been offered before the organization existed. Not only this, but foundation can be furnished the members for 30 cents a pound, instead of 50 cents a pound, which was the ruling price.

HUMBOLDT.

CREAMERY PRICES.—Arcata Union, March 17: Partial returns from the creameries at Ferndale give the following prices paid on the 15th inst. for butter fat: Grizzly Bluff, 24 cents per pound; Diamond Springs, 24½ cents; Excelsior, 22½ cents; Cold Springs, 24½ cents. Arcata creameries—Harpst & Spring, Minor and Lovern paid 23 cents each; Silva paid 26 cents. Butter is selling in Arcata for 25 cents per pound.

WOOLEN MILL INCORPORATED.—Eureka Standard, March 17: Articles of in-

corporation of the Humboldt Bay Woolen Mill Co. have been filed. The directors for the first year are Wm. Carson, Robt. Porter, Jno. M. Vance, Josiah Bell, H. W. McClellan, Wm. H. Russ and J. W. Henderson. The capital stock is \$100,000; and of the 10,000 shares into which it is divided 5650 have been subscribed for.

PLACER.

CANNERY BUSINESS.—Newcastle News-Messenger: The Lincoln Packing Co. has elected the following directors and officers: Jno. Haenny, J. S. Mariner, A. H. Schnabel, Chas. W. Pike and R. W. Skinner; Pres., Jno. Haenny; Vice-Pres., A. H. Schnabel; Sec'y, J. S. Mariner; Treas., Bank of D. O. Mills & Co.; Mgr., R. W. Skinner. It was decided to make as large a pack as last year and as much larger as they could secure help to put up. Last year about 400 hands were employed and about 40,000 cases of fruit packed. It is the desire of the management to secure from 600 to 750 hands the coming season.

MONTREY.

SPRAYING BEET FIELDS.—Watsonville Pajaronian, March 15: Beet thinning commenced last week at King City. They look healthy and are growing fast. Sowing has begun in nearly all beet districts. A novelty this year in beet culture is the spraying of beet fields. It is being practised at King City for protection against the blight which devastated the beet fields there last season. In addition to acting as a possible remedy for blight, spraying stimulates the young plants to a more vigorous growth and kills all the flies and beetles present in the field, many of which are injurious to the beets. Spraying costs about 60 cents an acre, and if it will prevent a stand of wheat from being eaten by insects, it is certainly cheaper and more advantageous than re-sowing.

SAN BENITO.

GRAIN AND FRUIT CROPS.—Hollister Advance, March 16: The early sown grain and the summer-fallow look well and are growing very fast; but the late sown grain will need heavy showers to help it out. There is plenty of grass on the ranges to keep the stock through. Fruit is setting heavy on the trees and will make a big crop with more rain and light frosts.

SAN BERNARDINO.

EXTENSIVE IRRIGATION.—Chino Champion, March 16: The sugar company is pushing ahead the work of grading and irrigating its land and planting beets as fast as eighty horses and a large number of men can do it. The pumping of the system of wells by air pressure from the factory is kept up steadily, and it requires a large number of irrigators to take care of the 3,000,000 gallons daily that is distributed.

APRICOTS RUSHING THE SEASON.—San Bernardino Sun, March 17: The advanced condition of the deciduous fruits in the valley, particularly apricots, is becoming the subject of much comment among fruit men, and some things are remarked which have never been noted before. The warm weather of February brought out the blossoms on the earlier varieties, and now fruit is not only formed but in some instances is nearly half grown, and all this without a leaf showing on the tree. Specimens were brought in from A. M. Ham's ranch yesterday, the fruit measuring 2 inches in circumference, and a big crop on the trees, without a single leaf being opened out as yet. From Highland and from the districts to the west come the same report, while now the later varieties are in full blossom, the trees being as white as snow. Generally the outlook for deciduous fruits is good, and the growers are expecting a large crop where they have water to carry the trees well through the spring.

SAN JOAQUIN.

IN THE BEET FIELDS.—Stockton Mail, March 14: In the vicinity of New Hope about 1500 acres of sugar beets have been planted under the direction of A. J. Larson for the Crockett Company. A number of small fields have been planted near Lodi, but the farmers on the upland were discouraged by the failure of beets during the last dry years, and many preferred to seed their land to grain this year. The beets that have been planted are flourishing and give promise of yielding a large crop.

BELGIAN HARES AFFECT HAY MARKET.—“It is remarkable how many Stocktonians are interested in Belgian hares,” said F. E. Ferrell to-day. “Why, the number is increasing so rapidly that it is beginning to have an effect upon the alfalfa hay market. Nearly every day we have orders for alfalfa hay from people who have no stables, and it puzzled us at first, especially as they were so careful to get the best quality of hay. After awhile we found out that they bought it for Bel-

gian hares. The fact that they must have the very best hay is causing considerable inquiry for high-grade alfalfa, and the result is that prices are keeping up well with grain hay.

SANTA CLARA.

WILL UPROOT VINES.—Mountain View Register, March 16: E. P. Boden of Santa Clara has been awarded the contract for pulling out 10,000 grape vines on the Delmas place. The vines are diseased and they will be removed to make space for younger ones.

CANNERY LEASED.—N. H. Downing of Santa Clara has leased the Mountain View cannery, and now our fruit growers can deliver their fruit near their own orchards instead of hauling it from eight to twelve miles.

POULTRY ASSOCIATION.—San Jose Mercury, March 15: A meeting of the Santa Clara County Poultry Association was held yesterday, which was very largely attended. There were many applications for membership, especially from those who have recently gone into the Belgian hare business. It was decided to hold a show in November and to make a large display of Belgian hares. The pavilion was the place selected. It is designed to make the largest display of fancy animals ever made in this city.

VETERINARIANS' QUARTERLY MEETING.—The California State Veterinary Medical Association, which is holding its quarterly session in this city, was convened at the rooms of Dr. H. A. Spencer. Among the members present were: Dr. D. F. Fox, Sacramento, Pres.; C. L. McGowan, Sacramento, Sec'y; Dr. F. E. Twining, Fresno; Dr. C. H. Blemer, State Veterinary Inspector, Sacramento; Dr. Pierce, Oakland; Dr. W. E. Wadams, Santa Clara; Drs. H. A. and H. F. Spencer, San Jose; Dr. J. Graham, Fresno; Dr. A. S. Williams, Marysville; Dr. Ira B. Dalziel, San Francisco.

SANTA CRUZ.

FRUIT SHIPMENTS.—Watsonville Pajaronian, March 15: During the apple shipping season, which ended last week, 553 cars were shipped from Watsonville to

Eastern points and about the same number of cars to California points. There were also small lots and express shipments which will bring the aggregate number of cars shipped to about 1100. Last season an unusually heavy tonnage of apples was used at the evaporators—estimated at over 200 carloads. From Hamm & Mortizia we have obtained the following statement of local fruit shipments made from Watsonville during the past season, and which passed through their loading agency: Stone fruits, 25,000 boxes; apples, 255,000 boxes; strawberries, 41,769 chests; blackberries, 1600 chests. Some shipments of stone fruits and apples were made from Pajaro and Vega, and fully as many strawberries and blackberries were shipped from those stations as from Watsonville.

SOLANO.

NEW CREAMERY.—Dixon Tribune, March 16: The starting of the creamery has filled the community with enthusiasm and the increase of the daily output is exceeding expectations. More than a ton of milk is being handled each day and new contributors are being continually added to the list.

LAST FRUIT SHIPMENTS.—Vacaville Reporter, March 17: The last peaches were shipped from Vacaville November 2d; the last grapes went out December 7th; the last apples January 5th; December 5th saw the last shipment of persimmons. During the months of November we shipped to the city 33,440 pounds of holly. There is but little dried fruit in the hands of the growers, probably not half a dozen carloads. Taking the stock of dried fruit in shippers' and growers' hands in this section, we think it will not amount altogether to twenty-five carloads. The bulk of this is prunes and peaches in about equal shares.

SONOMA.

EGGS FOR CAPE NOME.—Petaluma Courier, March 14: On Thursday at the warehouse the packing of a consignment of 60,000 eggs for Cape Nome was completed. Each case of thirty dozen contained seventy-five pounds of fine table salt.

ACME



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PULVERIZING HARROW

CLOD CRUSHER AND LEVELER.

Meets the most exacting requirements of all soils for all crops under all conditions. Crushes, cuts, lifts, pulverizes, turns and levels. Made of Cast Steel and Wrought Iron—lasts always. Light draft; cheap! Riding Harrow made. Best Pulverizer on earth. Sizes 3 to 13½ ft.

SENT ON TRIAL to be returned at my expense if not entirely satisfied. I deliver free on board at New York, Chicago, Columbus, Louisville, San Francisco, Kansas City, Minneapolis, &c. Catalogue and booklet, "An Ideal Harrow," mailed free. Address, **DUANE H. NASH, Sole Mfr., Millington, N. J., or Chicago, Ill.**

MENTION THIS PAPER.

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SUGAR BEETS.

The largest yield per acre of the best and smoothest form, and very rich in sugar, are grown by using

NITRATE OF SODA

as a fertilizer. Apply just when the beets are getting well started in the row. The results will surprise you.

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REGISTERED—“BLACKLEGINE”—TRADE MARK.

“Pasteur” single treatment Black Leg Vaccine READY FOR USE (no set of instruments required). Sold in packages:—No. 1 (10 head) \$1.50; No. 2 (20 head) \$2.50; No. 3 (50 head) \$6. Easily applied. No experience necessary.

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A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blisters from Horses and Cattle. **SUPERSEDES ALL CAUTERY OR FIRING.** Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charge paid, with full directions for its use. Send for descriptive circulars. **THE LAWRENCE-WILLIAMS CO., Cleveland, O.**

THE HOME CIRCLE.

An Old-Fashioned Woman.

"I'm goin' to die," says the Widder Greene,
 "I'm goin' to quit this airthly scene;
 'Tain't no place for me to stay
 In such a world as 'tis to-day;
 Such works and ways is too much for me,
 Nobody can't let nobody be.
 The girls is flounces from top to toe,
 And that's the hull o' what they know;
 The men is mad on bends and stocks,
 Swearin' and sheetin' an' pickin' locks;
 I'm real afraid I'll be hanged myself,
 Ef I ain't laid on my final shelf.
 There ain't a cretur but knows to-day
 I never was lunatic any way;
 But since the crazy folks all go free,
 I'm dreadful afraid they'll hang up me!
 There's another thing that's pesky hard—
 I can't step into a neighbor's yard
 To say 'How be you?' or borry a pin
 But what the paper'll have it in;
 'We're pleased to say the Widder Greene
 Took dinner a Tuesday with Mrs. Keene,
 Or 'Our worthy friend Mrs. Greene has
 gone
 Down to Barkhamstead to see her son.'
 Great Jerusalem! can I stir
 Without a-raisin' some feller's fur?
 There ain't no privacy, so to say,
 Ne more'n if this was Judgment Day.
 And as for meetin'—I want to swear
 Every time I put my head in there.
 Why, even Old Hundred's spiled and done
 Like everything else under the sun.
 It used to be so solemn an' slow,
 'Praise to the Lord from men below,'
 Now it goes like a gallopin' steer,
 High diddle diddle! there an' here.
 No respect to the Lord above
 Ne more'n ef He was hand an' glove
 With all the creturs He ever made,
 And all the jigs that ever was played.
 Preachin', too, but here I'm dumb!
 But I tell you what! I'd like it some
 If good old Parsen Nathan Strong
 Out of his grave would come along,
 An' give us a stirrin' taste o' fire—
 Judgment an' justice is my desire.
 'Taint all love an' sickish sweet
 That makes this world or t'other complete.
 But law! I'm old! I'd better be dead
 When the world's a-turnin' over my head;
 Spirits talkin' like tarnal fools,
 Bibles kicked out o' deestric schools,
 Crazy creturs a-murderin' round—
 Honest folks'd better be under the ground.
 So fare ye well! this airthly scene
 No more'll be pestered by Widder Greene."
 —Baltimore Sun.

Mabel's Problem.

Margaret was to leave on the morrow, and she and Mabel were now having one of those confidential talks that young girls enjoy so much. The white moonlight streamed in on them through Mabel's window as they brushed their hair leisurely and enjoyed the cool, sweet-scented summer air.

"What a lovely rest I have had, Mabel, and how good you have been to me!" said Margaret. "I don't see how I am ever going to thank you enough."

"How I am going to miss you!" responded Mabel, sadly. "I shall be lonely—nothing to do all day long, and I know I shall have the blues for a week. Do you know?" she continued earnestly, "I would give five dollars down for a good solution of the blues!"

Margaret looked at her, undecided whether or not to tell her what had been on her own heart for several weeks. The voice had been very honest.

"You know problems sometimes get into snarls, and are very hard to untangle and work out. My mother has been a wise teacher, and I could give you a rule. Would you have the courage to apply it, if it would surely bring the answer you want—happiness?"

"I think so," said Mabel. "I should try, at least. I am not satisfied with my life; I am miserable often, and I don't know where the trouble is," and again the voice was honest.

"Mabel," began Margaret, decidedly, "I have never had the blues in my life, and I believe occupation has had much more to do with it than temperament. You need work!"

"But that's just the trouble," interrupted Mabel, impatiently. "With plenty of money and a house full of servants, what is there for me to do?"

"My dear, every girl, rich or poor,

has a duty. The first thing for her to do is to open her eyes to it. Mother has always quoted Ruskin to us: 'Woman's work is to secure order, comfort, and loveliness in her home;' and as we grew up one by one we saw our mother often weary, always busy, and gradually we began to take a share from her shoulders. Each one of us older girls take charge of a little brother, darns his stockings, keeps his buttons on, tends to his lessons, manners, dress, while we take turns in the evenings reading or playing games or singing with the children. One of us dusts the parlor every morning before breakfast, one the hall, one the dining room, and when father comes down, he finds a sweet, light, attractive breakfast table with fresh flowers generally. Then we have regular days for the thorough cleaning of each room. If I had not known you at school, I should not venture on suggestions that might seem obtrusive and do no good; but surely the girl who was always at the head of her classes, who was never late, who was so tactful toward her companions, and so capable, should show some of it in her household. I shall not tell you what I have seen as your guest!"

"Please."
 "No, you have eyes of your own and plenty of sense; only use them. Go down to breakfast with your father some morning, as I did several times, and see whether it is a cheerful atmosphere, calculated to give a man courage for his day's work. Take your little motherless brother and study him. Begin with the top of his head and go down to the shoes on his feet, and ask yourself whether you would have handed in such a looking problem to a teacher at school, even if some one else had been paid to do your work for you. Ask yourself where he goes every evening until 9 or 10 o'clock, and what a boy is likely to grow into who at seven years old has no home influence."

"Where does your father go every evening and why? When he is so indulgent at other meals, and only begs his little housekeeper's presence at dinner every evening, why is she always late? I have shown you the snarls; go back to the beginning, apply the rule—work, bring every talent to bear on it, and I'm sure next year I shall see the same bright Mabel that I knew at school."

"Molly," Mabel said to the upper housemaid, the day after Margaret's departure, "call me an hour before breakfast to-morrow morning."

"Huh," said little Raymond, from the end of the hall, she'll have to call herself first; she sleeps until the gong sounds and never lets me get up."

Molly darted a quick glance, but Mabel apparently had not heard.

"Miss Mabel," she called, the next morning, it's twenty minutes till breakfast. Please excuse me this morning; I overslept."

"All right, Molly," Mabel called back cheerfully; "but let it be a full hour to-morrow, or I'll get cook to call you."

Molly shrugged her shoulders out in the hall, as if she was not certain about that bettering matters.

Mabel made a very good toilet by hurrying, and her father had only finished his fruit when he saw a sweet young figure in a pink gingham entering the gloomy half-opened dining room.

"Hello, little daughter," he exclaimed, surprised, but pleased, with the fresh vision; "going on a picnic to-day?"

"No father; I got up to have breakfast with you," said Mabel, feeling the unintentional rebuke, but determined to begin bravely.

"Where is Raymond, father; hasn't he come down yet?" she asked, after receiving her father's little pleased bow and thanks for the honour done him.

"No daughter; and what's more, he is never down in time, though I often hear him awake early. I'm afraid the poor little fellow has rather a hard time routing out Molly in the mornings. I hear a rumpus every now and again, but I don't like to have a fuss."

"Raymond!" cried Mabel, after her father had left, "what's the matter

with you? What is it you are fretting about?"

"I don't want to eat in the kitchen, and Molly says I have to."

"Never mind," said his sister; "Molly thought you would be lonesome in here, but I am going to talk to you, and to-morrow morning she'll have both of us up in time, and we will eat with father, will we not?"

The breakfast was brought in and Raymond set to work, while Mabel began a critical examination of the boy before her. Hair only partially parted and plastered down with water, the rest of the head untouched; shirt soiled, two buttons off; sleeves hanging open; no cravat; trousers full of spots; stockings shabby, one hole on the side; shoes, knots in lacings, and all of yesterday's dust on them.

"To secure order, comfort and loveliness in her home," she said, repeating Margaret's words. "No, I wouldn't have handed in such a looking problem at school."

Mabel's great gift was tact, and she now exerted it to get Raymond redressed from head to foot without an unpleasant word. Her orders were firm, but cheerful and simple, and as she started off to market, having left stated duties at home for each servant, she acknowledged that the little figure skipping and chatting by her side presented a very different appearance from the one at the breakfast table.

It was not very hard to secure order. The servants were bound to obey her, and she had a gift for planning their work. After the first morning the house was never musty, as if opened late; the mantlepiece and furniture never again showed the dust that made her blush as she realized what Margaret must have thought of it. The bright eye of the sun could peep into any corner of the house these days, and, as comfort followed order, she felt secure of this. She was sure every one in the house felt it—but loveliness?

Mabel forgot that a clean house is lovely; that a cheerful, rosy-cheeked housekeeper is lovely; that a tidy little boy is good to look at; that fresh

flowers, in clean, pure water, are beautiful. She thought only: "What can make it lovely, so that father will not want to go out evenings?"

Raymond's evening had been easily settled. She had started out without consulting his taste; but, finding that essential, had discovered many things to please and amuse him; but her father

Strong Bones

In speaking about Scott's Emulsion for children, you should not forget that it contains **lime** and **soda**, just what the child must have to form strong bones and good teeth. It's this forming time you want to look after.

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is even more easily digested than cream. It's surprising how children thrive when given it.

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—she couldn't tell him stories or play games with him—could she?

Mr. Wilson, his best friend, played crockinole constantly, and many of his friends dropped in after dinner and played with him. It came like an inspiration, early in the autumn, when the evenings began to be dreary from early darkness.

"Father," Mabel said one morning, "I am going to have an unusually good little dinner to-night. Wouldn't you like to ask Mr. Wilson in? You know he used to come quite often; and Raymond and I have such fun playing crockinole. He is really a fine player. Perhaps you and Mr. Wilson will challenge us to a game after dinner."

She had thought her father perfectly unaware of all her efforts, but his conscience had been pricking him during many a past evening. As he heard Raymond's merry little voice the night before, he had been greatly tempted to join in the fun, but he had feared the surprised look that might greet him from the innocent child. Older people are not always as brave as the younger ones. Here was his chance to break the ice and he welcomed it.

"What a lovely time we had, father!" said Mabel, as her father locked the front door after Mr. Wilson that night.

"And how well you play on the piano, little daughter," he responded.

"I think I love music even more than that nice game of yours. You'll have to play to me a great deal this winter."

Thus began a home life that meant happiness to all the family, and especially comfort to the father. The influence upon Raymond of this familiar and delightful association with his father and sister was manifested in many ways.

As Margaret stepped from the train the next summer, a neat little figure came forward from Mabel's side, lifting his hat as he took her satchel and put up his rosy mouth for the accustomed kiss.

In his eagerness and pride, he could hardly wait till he reached the front porch of his home to show Margaret the beautiful porch chairs and table that he and Mabel had painted together in the back yard, or the lovely sofa cushions that Mabel had made from feathers from his ducks and chickens.

When he said good night at a proper hour, and left his father and the girls on the porch, Margaret thought: "To secure order, comfort and loveliness—Mabel has solved the problem."—Francis Craig in Forward.

What to Teach Daughters.

Teach them to cook healthful food.

Teach them to wash, to iron, to mend stockings, to sew on buttons, to make their own clothes, and a well-fitting shirt.

Teach them to bake; to know that good cooking saves medicine.

Teach them that a dollar is worth one hundred cents; that only those are saving who spend less than they receive, and that whatsoever more is spent tends to impoverish.

Teach them that they are much better dressed in strong cotton garments than in silk, if they are debt.

Teach them that one round, full face is worth more than fifty beautiful consumptive ones.

Teach them to wear strong shoes.

Teach them to make good purchases, and to see to the reckoning of their accounts.

Teach them good common sense, confidence, self-reliance and industry.

Teach them to do garden work and enjoy nature.

Teach them likewise, if they have money enough, music, painting and all arts, remembering always that these things are secondary.

Teach them that walking is much better than riding, and that wild flowers are very beautiful to those who observe them.

Teach them to despise all make-believe and that one should say yes or no when one really means it.

Teach them that happiness in marriage depends neither upon the station nor the wealth of the husband, but upon his character.—Bertha Meyer.

Health as Well as Beauty.

Written for the PACIFIC RURAL PRESS by S. H.

Every woman of refinement should make it a practise to devote a little time each day to the improvement of her appearance. Of course a very-busy housewife cannot spend much time upon her person, but for health's sake it is wise to study some little points of beauty, that also effect the health. The care of the hand is one of those. Some families are remarkable for their beautiful hands, and no amount of hard work entirely destroys the tapering fingers and symmetry of such hands. Think not that it is vanity nor do not let any such remarks keep you from being careful of them. God has given them to you and the care of them not only preserves the shape, etc., but lessens them from danger of disease germs, when coming in contact with infectious diseases. Children's hands should be washed thoroughly at night, said an old family physician, as it frees the pores and leaves them unclogged and healthier. The nails must be kept perfectly clean, for that little rim of black means disease or bacteria oftentimes.

It requires industry and perseverance to keep neat and well groomed, but "cleanliness is next to godliness" and the bath is essential to health—so never neglect this.

To keep the hair healthy and soft it should be brushed night and morning, washed occasionally and dried in the sun.

Frequent brushing is also necessary to preserve the teeth from decay, and a daily washing of the mouth with listerine, borax or some other simple, safe disinfectant will be found excellent.

To preserve the complexion is one of the very important duties, if you wish to be pretty, for without a good clear complexion no one can be good looking. Use pure soap and soft water. A good lotion is made of six ounces of almond oil set in a pan of boiling water, add three chopped cucumbers and let it boil three hours, then strain and mix with an ounce of white wax, half an ounce of borax and two teaspoons of benzene.

A Singular Friendship.

One is not surprised when such noble animals as the dog and horse become fond of each other, nor the equally interesting cat and monkey, for they have much in common; but that Tabby and a chicken should fraternize with the utmost good will is surely worthy of remark, states a writer in the New York Herald. A woman, living in the country, had a pet hen, which, mounting into her lap with cackles of delight, would deposit its morning offering, a fresh egg, in the improvised nest. The creature was finally set in a special box in the carriage house, and the family waited with interest for the coming brood. One morning they noticed the hen at breakfast; and again, half an hour later, the fowl was strutting about in apparent indifference to her cooling eggs. "She'll make no setter," was the disgusted comment. She's been too pampered." Following her to the carriage house, the woman was just in time to see a fluffy mass leap from the box and the hen serenely take its place on the nest. This continued throughout the three weeks. When Madame Hen took her morning constitutional, Tabby Cat would obligingly keep house and look after her interests, leaving the moment the little lady returned.

"The lecturer," says a paper, "inquired dramatically: 'Can anyone in this room tell me of a perfect man?' A dead silence. 'Has anyone,' he continued, 'heard of a perfect woman?' Then a patient little woman in black rose up at the back of the auditorium and answered: 'There was one; I've often heard of her, but she's dead now. She was my husband's first wife.'"

AMERICA has furnished to the world the character of Washington. And if our American institutions had done nothing else, that alone would have entitled them to the respect of mankind.—Daniel Webster.

Chauncey Depew's Station.

Here is a story on Senator Depew told by his anecdotal alter ego, Joseph H. Choate. At a recent diplomatic dinner in London Mr. Choate sat next to a distinguished English nobleman, who, during the course of conversation, had occasion to inquire: "And to what station in your country, Mr. Choate, does your Mr. Chauncey M. Depew belong?"

"To the Grand Central Station my lord," readily replied the diplomat, without a quiver.

The Englishman's face clouded for a moment with uncertainty.

"I'm afraid you don't know what I mean," added Mr. Choate, about to go to his rescue. But his neighbor quickly smiled a glad smile of intelligence.

"Ah! I see, I see, Mr. Choate!" he exclaimed. "Mr. Depew belongs to your grand, great middle class."—Collier's Weekly.

The Housewife's Best Friend.

Turpentine is the best friend housekeepers have, and a supply should always be kept on hand. It is good for rheumatism and sore throat and a quick remedy for fits or convulsions.

It is a sure preventive against moths, a few drops rendering garments safe from such invasion when put in storage.

It drives away ants and bugs from storerooms and corners by putting a few drops on the shelves. It effectually destroys bugs and injures neither furniture nor clothing.

For cleaning paint add a spoonful to a pail of warm water. A little in the suds on wash day makes washing easier.

To give an appetizing flavor to broiled steak rub a cut onion over the hot plate.

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and restretch it where needed. It's portable.
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DON'T STAMMER!

TESTIMONIAL.

Santa Clara, Cal., Feb. 8, 1900.
On March 31, 1899, I sent my son, who was then a very bad stammerer, to Prof. J. Whitehorn for instruction. The professor was most successful in correcting his speech, and to-day he speaks and reads naturally and fluently and without any stammering whatever. The professor's name will never be forgotten.
GEORGE ROTH.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, March 21, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	65 1/2 @ 66 1/2	— @ —
Thursday.....	67 @ 68 1/2	— @ —
Friday.....	68 1/2 @ 69 1/2	— @ —
Saturday.....	67 1/2 @ 68 1/2	— @ —
Sunday.....	67 1/2 @ 68 1/2	— @ —
Tuesday.....	66 1/2 @ 67 1/2	— @ —

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May	July.
Wednesday.....	5s 9 1/2 d	5s 8 1/2 d
Thursday.....	5s 9 1/4 d	5s 8 1/2 d
Friday.....	5s 9 1/4 d	5s 8 1/2 d
Saturday.....	5s 10 d	5s 9 1/2 d
Monday.....	5s 10 1/2 d	5s 9 1/2 d
Tuesday.....	5s 9 1/2 d	5s 9 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	97 1/2 @ 97 1/2	1 04 @ 1 04 1/2
Friday.....	97 1/2 @ 98 1/2	1 04 1/2 @ 1 05
Saturday.....	98 1/2 @ 98 1/2	1 05 1/2 @ 1 04 1/2
Monday.....	98 @ 97 1/2	1 04 1/2 @ 1 04 1/2
Tuesday.....	98 1/2 @ 98 1/2	1 04 1/2 @ —
Wednesday.....	99 @ 98 1/2	1 05 1/2 @ 1 04 1/2

WHEAT.

An effort was made in the speculative wheat market to move values upward, but it was not sufficiently pronounced to appreciably affect spot values. The firmness in prices of options was based on the freezing weather East, decrease in shipments from the Argentine, and rumors of unfavorable crop weather in Southern Russia. There is little or no prospect, however, of the surplus in exporting countries proving inadequate for the European demand during the balance of the season. The only condition likely to bring about an unusual inquiry and hardening of rates would be very decided damage to a large area of the crop now seeded. Scarcity of ships and high ocean freight rates continue to seriously handicap the local wheat market. One encouraging feature was a demand for Chile, one ship being chartered for this purpose and a steamer now loading taking 1000 tons. Further shipments are expected to follow, probably to the extent all told of about 6000 tons.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 97 1/2 @ 99c.	
December, 1900, delivery, \$1.04 @ 1.05 1/2.	
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at 99 @ 98 1/2; December, 1900, \$1.05 1/2 @ 1.04 1/2.	
California Milling.....	97 1/2 @ 1 02 1/2
Cal. No. 1 shipping, alongside.....	96 1/2 @ 98 1/2
Oregon Valley.....	95 @ 1 00
Walla Walla Blue Stem.....	95 @ 1 02 1/2
Walla Walla Club.....	85 @ 1 00
Off qualities wheat.....	82 1/2 @ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	-s-d @ -s-d	-s-d @ -s-d
Freight rates.....	— @ 23 1/2	40 @ 41 1/2
Local market.....	\$1 08 1/2 @ 1 11 1/4	96 1/2 @ \$1.00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

The general tone and quotable rates of the market for this commodity have not changed materially since last publication. Superfines have been selling to a little better advantage than recently, owing to greatly reduced stocks. Values for family extras have remained as favorable to buyers as previously noted, with offerings more than ample for present needs.

Superfine, good grades.....	22 40 @ 2 60
Superfine, lower grades.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

Prices have not fluctuated to any noteworthy degree during the week under review. Demand was slow and is not likely to be particularly brisk in the near future. Most of the barley now changing hands is for local use or for shipment to the Hawaiian Islands. Offerings are not especially heavy, nor is there much selling pressure, and to this fact more than any action of buyers is the steadiness of the market attributable. Market closed dull and tended against sellers.

Feed, No. 1 to choice.....	72 1/2 @ 75
Feed, fair to good.....	67 1/2 @ 72 1/2

Brewing, No. 1 to choice.....	85 @ 95
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

Choice to fancy White oats continue in very limited stock and for this description the market is firm at the rates quoted. For common to medium grades, and more especially for ordinary qualities, the market is fully as favorable to buyers as previously noted. Trading in cheap oats, as for some time past, is largely in colored descriptions, which are affording to the consumer relatively better values than White oats.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 15 @ 1 22 1/2
White, poor to fair.....	1 07 1/2 @ 1 12 1/2
Gray, common to choice.....	1 10 @ 1 20
Millings.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 31
Black Russian.....	90 @ 1 02 1/2
Red.....	95 @ 1 20

CORN.

Large White, good to choice.....	1 10 @ 1 15
Large Yellow.....	1 10 @ 1 15
Small Yellow.....	1 50 @ 1 60
Eastern Mixed.....	1 07 1/2 @ 1 10

RYE.

Not much offering, neither is there any great demand. Values are quotably unchanged. Most holders refuse to let go at current rates.

Good to choice, new.....	97 1/2 @ 1 00
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BUCKWHEAT.

There is virtually nothing doing and only nominal quotations are possible. Very little Pacific coast buckwheat has been offered this season.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

Beyond a tolerably firm tone for White beans, due to more active inquiry on Eastern account and no improvement in crop prospects, the market shows much the same general condition as noted in previous review. It is all guesswork, of course, as to the outcome of next crop, for the planting of the beans for the coming season is yet a thing of the rather remote future. Present supplies are not heavy, especially of desirable qualities, and are mostly in hands competent to hold. Should there be any material hardening, it is more apt to be about the time new crop will be seeded than at any other period.

Pea, fair to good, 100 lbs.....	3 33 @ 3 50
Small White, good to choice.....	3 15 @ 3 30
Lady Washington.....	3 10 @ 3 20
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 65 @ 2 85
Bayos, good to choice.....	3 15 @ 3 35
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 10 @ 5 25
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

DRIED PEAS.

Outside of small holdings in the hands of millers and jobbers, the market is practically bare. Under the circumstances, wholesale values are necessarily largely nominal.

Green Peas, California.....	2 00 @ 2 15
Niles Peas.....	2 00 @ 2 15

WOOL.

New wool is beginning to arrive from the southern counties, but receipts up to date have not been large, and it will probably be a fortnight yet before values will be sufficiently determined to enable the giving of close quotations. With the condition of the wool practically the same, prices should be 40% to 50% better than at the opening of last season. Below are given probable figures for the new clip, but no trading of consequence is looked for before April.

Humboldt and Mendocino.....	20 @ 23
Northern, free.....	16 @ 18
Northern, defective.....	13 @ 16
Middle Counties, free.....	15 @ 17
Middle Counties, defective.....	13 @ 15
Southern Mountain, 12 mos.....	12 @ 14
Southern Mountain, free, 7 mos.....	12 @ 15
Southern Mountain, defective, 7 mos.....	10 @ 12
Nevada, as to condition.....	16 @ 18

HOPS.

The local market presents no new features. There is no wholesale movement and very little doing in a jobbing way. Strictly choice to select might meet with a moderate demand at a slight advance on quotations, but there are virtually none such offering.

Good to choice, 1899 crop.....	6 @ 9
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HAY AND STRAW.

Markot for hay is dragging along in much the same rut as for some time past. If there is any difference to note, there is a weaker condition than previously existed. Fancy Wheat hay was selling up to \$10 per ton in a small way, but now sales above \$9.50 are the rare exception, some hay of excellent quality going at this

figure. Common grades of hay meet with poor custom at prevailing low rates.

Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 50 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 50 @ 7 00
Stock.....	4 50 @ 5 50
Compressed.....	6 50 @ 9 50
Straw, per bale.....	30 @ 40

MILLSTUFFS.

Most kinds of mill offal were in ample supply for current requirements, and the tendency of prices was in favor of buyers, but quotable rates were without special change. Rolled Barley ruled steady. Milled Corn was firmly held.

Bran, per ton.....	11 50 @ 12 50
Middlings.....	15 00 @ 17 00
Shorts, Oregon.....	12 00 @ 15 00
Barley, Rolled.....	16 50 @ 17 00
Cornmeal.....	23 50 @ 24 00
Cracked Corn.....	24 50 @ 25 00

SEEDS.

Markot shows the same quiet condition as previously noted, and there are no changes to record in quotable rates. Stocks of most kinds are too small to admit of other than a very light jobbing trade.

Mustard, Trieste.....	Per cbl. 3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25
Canary.....	Per lb. 3 1/4 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/4
Alfalfa, Utah.....	9 @ 10

BAGS AND BAGGING.

In the market for Grain Bags there is no business doing worth mentioning. Values remain quotably as before noted. Wool Sacks are receiving some attention and are commanding steady rates. For Wool Sacks in less than bale lots an advance of 1 1/2 @ 3c above quotations is charged.

Calcutta Grain Bags, buyer June-July.....	6 1/4 @ —
Calcutta Grain Bags, spot.....	6 1/4 @ —
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ —
State Prison Bags, per 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/4
Fruit Sacks, cotton.....	6 1/4 @ 7 1/4

HIDES, PELTS AND TALLOW.

Hide market is weak for Wet Salted and barely steady for Dry stock. Pelts are in moderate request at unchanged rates. Horse Hides bring former figures. Tallow market is moderately firm, with demand very fair.

HONEY.

While business is of a light order, there is about as much doing as could be reasonably expected with the present small stocks. Sales effected are at figures justifying a continuance of former quotations.

Extracted, White Liquid.....	7 1/2 @ 8
Extracted, Light Amber.....	7 @ 7 1/2
Extracted, Amber.....	5 @ 5 1/4
White Comb, 1 lb frames.....	11 1/4 @ 12 1/4
Amber Comb.....	8 @ 10

BEESWAX.

Supplies and offerings are of slim volume and the market presents a firm tone. No trouble is experienced in securing custom for desirable qualities at current rates.

Good to choice, light, per lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Market for Beef was fairly steady; supplies were fully sufficient for the requirements. Prices for Mutton were not so well maintained as last quoted. Veal was in light receipt and market was moderately steady at quoted values. Lamb was not in brisk request at ruling figures. Hogs arrived rather freely and prices averaged lower than preceding week.

Beef, first quality, dressed, net per lb.....	6 1/2 @ 7
Beef, second quality.....	6 1/2 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 @ —; wethers.....	7 1/2 @ —
Hogs, hard grain fed, medium.....	5 1/2 @ —
Hogs, small, fat.....	5 1/2 @ —
Hogs, large, hard.....	5 1/2 @ 5 1/4
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ —
Hogs, country dressed.....	5 1/2 @ 6
Veal, small, per lb.....	7 @ 9
Veal, large, per lb.....	7 @ 8
Lamb, spring, per lb.....	10 @ —

POULTRY.

There were no heavy arrivals of California poultry of any description, and had it not been for tolerably free receipts of Eastern, mostly old stock, prices would have ruled firm and many consumers would have been compelled to go without. As it was, choice young fowls continued to bring very fair prices, and considerably more poultry of this sort than arrived could have been advantageously placed. At close the market showed more ease, most consumers operating slowly.

Turkeys, dressed, per lb.....	— @ —
Turkeys, live hens, per lb.....	12 @ 13

Turkeys, live gobblers, per lb.....	11 @ 12
Hens, California, per dozen.....	4 00 @ 5 00
Roosters, old.....	4 00 @ 4 50
Roosters, young (full-grown).....	6 00 @ 6 50
Fryers.....	5 50 @ 6 00
Broilers, large.....	4 50 @ 5 00
Broilers, small.....	3 00 @ 4 00
Ducks, per dozen.....	4 00 @ 5 50
Geese, per pair.....	2 00 @ 2 25
Goslings, per pair.....	2 50 @ 3 00
Pigeons, old, per dozen.....	1 50 @ 1 75
Pigeons, young.....	2 00 @ 2 25

BUTTER.

Market was lower than preceding week, there being a quotable decline on most descriptions of fully a cent per lb, owing to less active shipping demand, while receipts of creamery and separator butter were on the increase. Dairy butter was not in as heavy supply, compared with the demand, as creamery and separator stock.

Creamery, extras, per lb.....	21 @ —
Creamery, firsts.....	20 @ —
Creamery, seconds.....	19 @ —
Dairy, select.....	18 @ 19
Dairy, seconds.....	17 @ 18
Dairy, soft and weedy.....	— @ —
Mixed store.....	15 @ 16
Creamery in tubs.....	19 @ 21
Pickled Roll.....	— @ —
Firkin, California, choice to select.....	19 @ 21
Firkin, common to fair.....	17 @ 18

CHEESE.

Market for the home article is not quotably lower, but is weak at the figures current, the demand being less active than a week or two ago, while stocks are heavier. There would be more cheese shipped, but most offerings are too new to stand long trips, unless packed only one cheese to the case, and this makes them too expensive. Eastern cheddars have been again advanced, and are now jobbing here at 17 @ 17 1/2c, with market very strong.

California, fancy flat, new.....	9 @ —
California, good to choice.....	8 1/2 @ —
California, fair to good.....	8 @ —
California Cheddar.....	— @ —
California, "Young Americas".....	9 @ 10

EGGS.

As intimated in last review would likely be the case, the higher prices then quoted for eggs proved very temporary. There are more eggs coming forward than are needed for immediate use, and values are governed largely by the bids of speculative operators who are storing for the future. In a small way some extra select are going a little above quotations.

California, select, large, white and fresh.....	15 @ —
California, select, irregular color & size.....	13 @ 14
California, good to choice store.....	12 1/2 @ 13
Eastern, as to section and grading.....	— @ —
Eastern, cold storage.....	— @ —

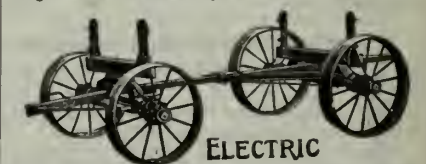
VEGETABLES.

Market for most kinds of Spring vegetables now arriving inclined in favor of the consumer. Asparagus was in liberal receipt and heavy shipments were made East. Choice Tomatoes were not in large supply and sold to advantage. Fine Rhubarb brought good average prices. In the line of Winter vegetables about the only noteworthy feature was the very stiff market for choice Onions, which were scarce.

Asparagus, per box.....	65 @ 1 75
Beans, String, per lb.....	5 @ 8
Cabbage, choice garden, per 100.....	40 @ —
Cauliflower, per dozen.....	50 @ —
Cucumbers, hot-house, per doz.....	75 @ 1 50
Egg Plant, per lb.....	8 @ 10
Garlic, per lb.....	2 1/2 @ 4
Onions, Yellow, Cal., good to choice.....	2 40 @ 2 60
Onions, Oregon, per cental.....	2 50 @ 2 75
Peas, Sweet, garden, per lb.....	2 1/2 @ 3
Peppers, Green Chile, per lb.....	— @ —
Peppers, Bell, per lb.....	— @ —
Rhubarb, per box.....	1 00 @ 1 50
Squash, Summer, per box.....	1 00 @ 1 25

Farm Wagon Economy

The economy of this proposition is not all found in the very reasonable price of the wagon itself, but in the great amount of labor it will save, and its great durability. The Electric Wheel Co. who make this Electric Handy Wagon and the now famous Electric Wheels, have solved the problem of a successful and durable low down wagon at a reasonable price.



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"This wagon is composed of the best material throughout—white hickory axles, steel wheels, steel hounds, etc. Guaranteed to carry 400 lbs. These Electric Steel Wheels are made to fit any wagon, and make practically a new wagon out of the old one. They can be had in any height desired and any width of tire up to 8 inches. With an extra set of these wheels a farmer can interchange them with his regular wheels and have a high or low down wagon at will. Write for catalogue of the full "Electric Line" to Electric Wheel Co., Box 10, Quincy, Ill.

Steel Wheels for FARM WAGONS
Any size wanted, any width of tire. Hub to fit any axle. For catalogue and prices write Empire Manufacturing Co., Quincy, Ill.

Tomatoes, Southern, 30 box..... 1 50 @2 00
Tomatoes, Bay, 30 box..... @ —

POTATOES.

There are fairly liberal supplies of old potatoes, but they are mostly very ordinary quality, and for this sort the market is weak and dragging. Strictly choice are too scarce to be quotable in a regular way and would bring higher figures than below noted. Seed potatoes are in fair supply and there is not much inquiry for them at present.

Burbanks, River, 30 cental.....	40	@	90
Burbanks, Bay counties, 30 cental..	60	@	95
Burbanks, Humboldt.....	70	@	1 00
Burbanks, Oregon.....	50	@	1 05
River Reds.....	—	@	—
Burbanks, Salinas, 30 cental.....	—	@	—
Early Rose.....	75	@	90
Garnet Chile.....	60	@	80
Peerless.....	1 00	@	1 10
New Potatoes, 30 lb.....	1 14	@	2 1/2
Sweet, River, 30 cental.....	—	@	—
Sweet Merced.....	2 50	@	2 60

The Fruit Market.

FRESH FRUITS.

Apple market continues to be as lightly stocked as previously noted, and for choice to select table fruit stiff prices are obtainable, in some instances more than below quoted. Common qualities or Cooking Apples are not plentiful, but they have to go at comparatively reasonable figures to meet with prompt custom. Strawberries were in very light receipt, Longworths selling at 75c@81 per drawer, and large berries at \$6@10 per chest, as to quality.

Apples, fancy, 4-tier box.....	1 75	@	2 25
Apples, good to choice, 30-lb box..	1 25	@	1 75
Apples, common to fair, 30-lb box..	50	@	1 00

DRIED FRUITS.

The condition of the market for cured and evaporated fruits remains virtually without change since last review. There is a moderate movement in Prunes at generally unchanged figures, but with this exception there is scarcely anything doing worth mentioning, business in other fruits being confined almost wholly to the filling of small orders by jobbers. There would likely be more business in Prunes of small sizes were as easily obtainable as medium and large. The inquiry is mostly for small prunes or for the four sizes with the usual proportion of small. Other holdings are principally Peaches, Apples and Figs, although Apricots, Plums and Pears are still fairly represented in the supplies of jobbers. Stocks of Peaches unplaced are estimated at from 120 to 130 carloads, these being in heaviest stock, outside of prunes, of any fruit on market. Confidence is still expressed that the Spring and early Summer trade will wipe out nearly everything in the dried fruit line now in sight, but it would be much more satisfactory to have some snap to the market instead of the dragging trade now being as a rule experienced. Prospects for any hardening of prices are poor unless inquiry soon becomes more active and buyers take hold more freely than they have been doing lately. Shipments as manifested through the custom house show no noteworthy quantities to have been forwarded outward by sea the past week.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, 30 lb.....	10 1/2	@	12
Apricots, Royal, fancy.....	12 1/2	@	13
Apricots, Moorpark.....	13	@	15
Apples, in 50-lb boxes, rings, pressed, fancy.....	7	@	—
Apples, 50-lb boxes, rings, pressed, good to choice.....	5 1/2	@	6 1/2
Figs, White, fancy pressed.....	5 1/2	@	6 1/2
Peaches, unpeeled, good to choice.....	5 1/2	@	6 1/2
Peaches, unpeeled, fancy.....	7	@	7 1/2
Peaches, peeled, in boxes.....	12 1/2	@	15
Pears, unpeeled Bartletts, halved, fancy.....	9	@	10
Pears, halved, unpeeled Bartletts.....	6 1/2	@	8
Pears, quartered, unpeeled Bartletts.....	6 1/2	@	7 1/2
Plums, Black, pitted.....	6 1/2	@	7 1/2
Plums, White and Red.....	7	@	8
Prunes, in sacks 40-50s.....	4	@	4 1/2
50-60s.....	3 1/2	@	3 3/4
60-70s.....	3 1/4	@	3 1/2
70-80s.....	3 1/4	@	—
Prunes in boxes, 1/2 higher for 25-lb boxes, 1/2 higher for 50-lb boxes.	—		—
4 sizes Santa Claras and equal.....	3	@	—
4 sizes San Joaquin and Northern.....	2 1/2	@	2 3/4
Prunes, Silver.....	4	@	7

COMMON SUN-DRIED.

Apples, sliced.....	4	@	5
Apples, quartered.....	4	@	5
Figs, Black.....	—	@	3
Figs, White.....	3	@	3 1/2
Peaches, unpeeled.....	5	@	6

RAISINS.

There are no new developments to record in the raisin market. Trading is of insignificant proportions. Offerings are not heavy and are mostly in the hands of jobbers. Previous rates as fixed by the Growers' Association remain in force.

F. O. B. FRESNO DELIVERY.

do do 3-crown, 30 box.....	1 60	@	—
do do 2-crown, 30 box.....	1 50	@	—
Valencia Layers, 20-lb box.....	80	@	1 00
(Usual advance for fractions.)			
Loose Muscatel, 3-crown.....	6 1/2	@	—
Loose Muscatel, seedless.....	5	@	—

Pacifics.—2-crown loose Muscatel, 5 1/2c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c.
Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.
(Above prices for loose raisins are for 50 lb. boxes.)
Thompson Seedless.—Bleached fancy, 30 lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.
Sultanas.—Bleached fancy, 30 lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.
Loose Valencia.—Fancy, 30 lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.
Valencia Clusters.—Fancy, 30 lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Orange market was heavily stocked with low grade fruit and was naturally weak for this description, with the bulk of sales closer to the inside than to outside quotations. Small and inferior Navels went by auction at 55@65c. per box. Fancy Navels sold mainly within range of \$2.25@2.75 per box, as to size and mark, with market firm at ruling rates for strictly choice. Lemons sold at much the same figures as previously quoted, but there was not much firmness to the market, and that which did exist was confined wholly to most select. The Lime market showed steadiness, with stocks of small compass and in few hands, but the demand at ruling figures was not very active.

Oranges—Navels, 30 box.....	1 25	@	2 50
California Seedlings.....	50	@	1 25
Lemons—California, select, 30 box.....	2 00	@	2 25
California, good to choice.....	1 50	@	1 75
California, common to fair.....	1 00	@	1 25
Limes—Mexican, 30 box.....	5 50	@	6 00
California, small box.....	50	@	1 25

NUTS.

Market throughout is exceedingly quiet, as is almost invariably the case at this season. Almonds are still held by jobbers in considerable quantity. Walnuts are in light stock and there are virtually no choice offering. Peanuts do not make much of a display, either of imported or domestic stock, and market is firm at ruling rates.

California Almonds, shelled.....	14	@	17
California Almonds, paper shell, 30 lb.....	10	@	11
California Almond, soft shell.....	7	@	8
California Almonds, hard shell.....	4	@	5
Walnuts, White, soft shell.....	9	@	10
Walnuts, White, California, standard.....	7	@	8
Chestnuts, California Italian.....	8	@	10
Peanuts, California, fair to prime.....	5	@	6
Peanuts, Eastern, hand-picked.....	6	@	6 1/2
Pine Nuts.....	5	@	6

WINE.

Although quotable rates remain unchanged, claret of last year's vintage being held at 15@20c per gallon, as to quantity and quality, San Francisco delivery, there is not much doing at present. The large dealers are holding off to see if there will be any serious damage to the vineyards this spring by frost. If there should be damage, they would make effort to purchase as speedily as possible at current figures and might find it necessary to pay more. Without damaging frosts, indications now are that dealers will take hold slowly and only as compelled to, unless able to dictate figures in their favor. Shipments by sea in February were 572,488 gallons and 804 cases. For same month last year 230,644 gallons and 860 cases.

California Dried Fruit at New York.

NEW YORK, March 21.—Evaporated apples, common, 4 1/2@5 1/2c; prime wire tray, 6@6 1/2c; choice, 7@7 1/2c; fancy, 7 1/2@8 1/2c.
California dried fruits dull at nominally unchanged figures.
Prunes, 3 1/2@6c.
Apricots, Royal, 13@15c; Moorpark, 15@18c.
Peaches, unpeeled, 7 1/2@9c; peeled, 18@22c.

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Sixty Years.

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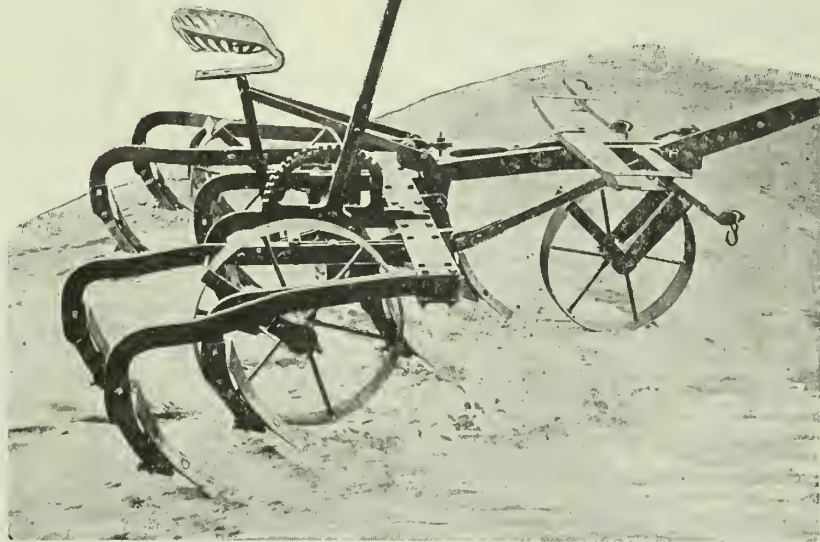


THE FORBES CULTIVATOR

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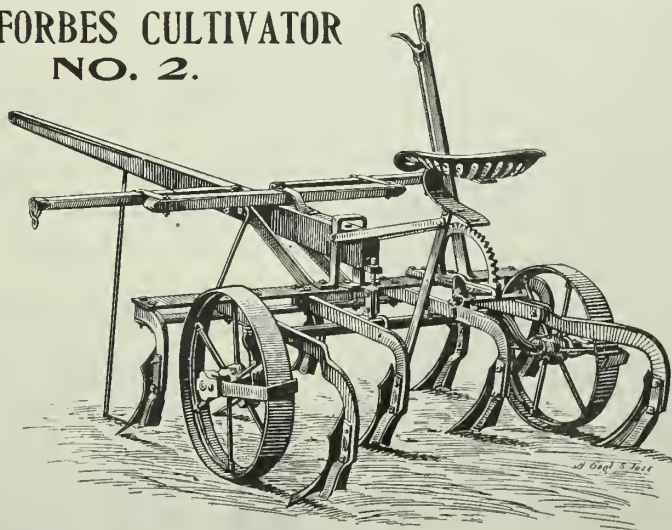
Best iron and steel. No woodwork to weather-check or split. No neck draft. Teeth and shovels will not clog. Driver has his work in front of him. Any kind of tooth may be used.

The Forbes Cultivator is made in three sizes: 9, 11 and 13 teeth. The 9-tooth cuts either 4 or 5-foot width; the 11-tooth cuts 6-foot width, or by removing bolts can be reduced to 5-foot or even smaller if desired. The 9 and 11-tooth are calculated for two-horse machines; the 13-tooth for three or four horses, and cuts either 5, 6 or 8 feet in width. This implement is commended by all who use it. For further particulars call on or address

GEORGE W. FORBES,

Patentee and Manufacturer.....CAMPBELLS, SANTA CLARA CO., CAL.

THE FORBES CULTIVATOR NO. 2.



This Cultivator has all the features of the 3-wheel Forbes Cultivator, except the pole, which is rigid. This is the best 2-wheel Cultivator that has ever been put on the market. It is made in two sizes, 5 and 6-foot cut.

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Will Carry 4000-lb. Load.
Most Profitable Truck Made,
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Manufactured by.....HAVANA METAL WHEEL CO., Havana, Ill.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR WEEK ENDING MARCH 6, 1900.

- 644,843.—MOTOR VEHICLE—A. Bink, Stockton, Cal.
644,729.—SNATCH BLOCK—W. W. Bouso, Aberdeen, Wash.
644,730.—WHEEL HUB—S. Colt, Santa Barbara, Cal.
644,731.—VEHICLE TIRE—R. Cousins, S. F.
644,741.—OIL GAS VALVE—S. Guthrie, S. F.
644,770.—LEACHING ORES—R. W. Kennedy, Ashland, Or.
644,614.—LAND SCRAPER—G. M. Light, Pomeroy, Wash.
644,675.—ROPE TRAMWAY—J. T. Ludlow, S. F.
645,040.—PIE RACK—W. H. Mayo, Los Angeles, Cal.
644,775.—CHEESE CUTTER—Nagley & Asbery, Marysville, Wash.
644,935.—REFRIGERATOR—J. Nash, Dayton, Wash.
644,869.—WAVE POWER—W. Newell, S. F.
644,680.—TELEPHONE GUARD—L. B. Ordway, S. F.
644,723.—LIFE BOAT—W. S. Ray, S. F.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

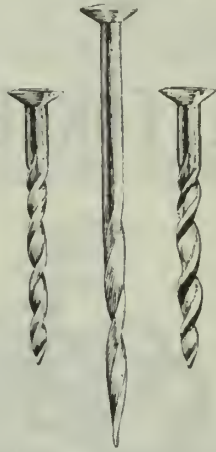
ELASTIC TREAD HORSESHOE.—C. Y. DeLay, Murphy, Cal. No. 644,284. Dated Feb. 27, 1900. This invention relates to an attachment for metallic shoes by which an elastic bearing is provided for the horse's foot, and a means for removably securing the same. It comprises a tongue and grooved bar of rubber, and a correspondingly channelled metallic shoe so constructed that the elastic bar may be introduced or removed in such a manner that it is practically locked in place for use. The rubber bar is slipped into the groove or channel in the lower part of the shoe and pushed around a curve of the shoe, so that the outer face or tread covers the flanges of the shoe, and provides a perfect rubber tread. The shoes themselves are provided with nail holes so disposed that they can easily be fastened upon the animal's foot.

CONCENTRATOR.—George Gates, Jackson, Cal. No. 644,289. Dated Feb. 27, 1900. This invention relates to improvements in endless traveling belt concentrators, in which the belt passes over drums at opposite ends of the frame, so that its upper surface stands at an incline from one drum to the other, with means by which the belt is caused to move slowly from the lower toward the upper end, having devices by which the pulp mixed with water is delivered upon the belt so that with the movement and travel of the belt and the action of the water, the lighter valueless portions are washed off over the lower end, and the heavier material will be gradually concentrated and carried up over the upper end of the belt and delivered into a wash and collecting tank. A trough is arranged transversely above the belt for distributing the pulp and water which is received into it by means of divergent channels and these delivered into a series of parallel troughs extending transversely above the belt, and so arranged that pulp will overflow from one trough to the next. These troughs are perforated with holes through which the pulp will fall upon the belt at different points in the length thereof, depending on the gravity of the pulp which is being fed.

LOCK.—J. C. Meyer, San Francisco, Cal. No. 644,255. Dated Feb. 27, 1900. This invention relates to improvements in door locks, and is designed to provide an improved means for operating the latch by which the door is held in a closed position. In this lock there is a slidable spring-pressed latching bolt having rearwardly extending parallel bars, a frame fixed between said bars and toggle levers having the front ends pivoted to the stationary frame. A pin projects through slots in the rear portion of the frame and connects with the parallel bars of the slidable latch. The transverse angles of the toggle levers are united by pivots so that they project through the lock plate, and hollow knob shanks are fixed upon opposite sides of the door in line with the projecting lever angles. Spring-pressed push buttons are slidable in the outer ends of the knob shanks and pins projecting with said buttons extend inwardly through guiding tubes so as to contact with the

transverse angles of the toggle levers, so that pressure upon the push buttons acts to compress the levers transversely and extend them in line of movement of the latch and thus withdraw the latch. When the buttons are released the latch will be returned to its normal position by any suitable spring.

NAILS.—J. T. Eyster, Eagleville, Cal. No. 644,286. Dated Feb. 27, 1900. This invention is designed to improve nails for fastening timber and other articles together, and its object is to provide a means for securely locking nails of all descriptions when they have been driven—such a formation of the entering point as will insure the cutting of the fibres of the wood to form a channel into which the spiral of the nail passes, and to lessen the danger of splitting the wood by the driving of such a nail. The upper part of the



shank of the nail is cylindrical, the lower part is flattened and twisted into a spiral form as shown in the accompanying cut. The front edge of the spiral is beveled to an edge, while the rear is square without bevel to give increased strength at that point. The nail has a rounded point, the edges of which are beveled, one of the edges merging into the beveled front edge of the spiral body and forming a continuation thereof. This construction causes the nail to turn about its axis as it is driven, and when once seated it is firmly held in place, and not liable to be withdrawn.

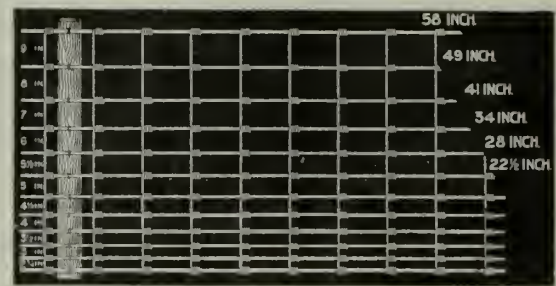
OIL GAS VALVE AND APPARATUS.—Samuel Guthrie, San Francisco, Cal. No. 644,741. Dated March 6, 1900. This invention relates to an apparatus for continuously feeding oil to the retorts or channels of gas-making apparatus, and a valve by which the feed may be regulated and maintained at a constant flow. It consists of a pipe tapering from and returning to the tank, a pump by which a continuous circulation of liquid within the pipe is produced, and means for regulating the pressure within the pipe, together with valve or cock through which the liquid is delivered under pressure, this valve having a rectangular or diamond-shaped port, and a correspondingly shaped passage over which it is adjustable. There is a by-pass pipe connected with the main pipe upon each side of a cock which controls the flow and regulates the pressure.

The "Sang Digger."

One of the most picturesque figures in America is the "Sang Digger," who roves over the mountains of the Eastern States hunting for the root of the ginseng plant. In his manner of living and habits he resembles the careless bohemian of the Eastern countries rather than the staid business-like American. The ginseng root which he gathers is readily converted into goods or money, as the demand for this plant far exceeds the supply. Dealers pay \$5 and \$6 per pound for the dried roots. Most of America's output is shipped to China, where it is held in high esteem by the Chinese on account of its supposed medicinal properties. The

"Sang Digger" has so depleted the native forests of the ginseng plant that it is becoming scarcer every year. This fact has led to its cultivation with very profitable results. F. B. Mills of Rosehill, N. Y., is making a special offer on ginseng seed and plants. He issues a booklet on the subject explaining the simplicity of its cultivation and its uses.

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COMPETITORS HAVE FRANKLY ADMITTED THAT

The Improved U. S. Separators

ARE THE BEST SKIMMERS ON THE MARKET.

We illustrate herewith our new corrugated bowl, which is giving such perfect satisfaction, and which **does not require hot water to flush.** A small quantity of skim milk does the work thoroughly—more so than competitors that have central tubes and a multiplicity of discs for the cream to stick to, as the U. S. has neither. Competitors, in their efforts to find something to check the

Victorious Progress of the United States,

have tried to make a big bugbear of using hot water to flush the bowl, but now this, their last criticism, is overcome, and they are at loss to know what to harp on to prejudice purchasers against the Improved U. S. and reduce the constantly increasing sales. Write for our 1900 or "New Century" catalogue giving full particulars.

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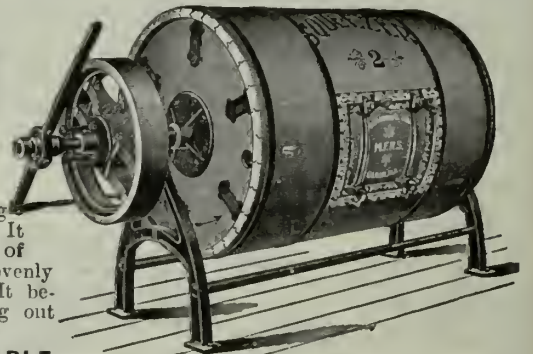
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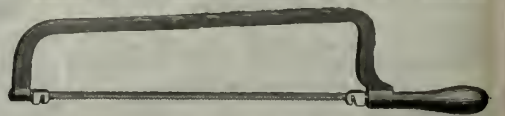
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FLORIST AND GARDENER

Rubber Plantations.

TO THE EDITOR:—The false impression has recently got abroad that the "ule" or rubber tree of Central America (*Castilloa elastica*) cannot be cultivated outside of its native haunts. That this is a mistake is well known to students of commercial botany, and is further illustrated by the following statement made by Dr. Morris at the Second West Indian Agricultural Conference, recently held in the island of Barbados. Dr. Morris says: "A regular plantation of indiarubber trees, the first in the West Indies, is being established at Tobago by Mr. Ernie Howard. The species selected is the Central American rubber tree, locally known as ule, or caucho (*Castilloa elastica*). It was recently reported that this tree was found wild in Cuba. This is evidently an error. Rubber trees are being planted in small plantations and in isolated groups also in Trinidad and Jamaica. The cultivation could be successfully established in some localities in British Guiana, where already one or more valuable species are found in a wild state." *Castilloa elastica* is, of course, a tree of the tropics and can not be expected to thrive in other than tropical countries. There is nothing, however, to prevent its being successfully cultivated in tropical countries other than those in which it is found wild, provided, of course, that the necessary climatic and soil conditions prevail.

The ule tree is readily propagated by cuttings, and was successfully introduced in the British East Indies as early as 1876 through the efforts of the Botanical Gardens at Kew, England. The Ceylon trees are already yielding rubber.

In Trinidad an extensive propagation and distribution of young ule trees is being conducted, some 10,000 specimens having been sent out in 1896.

Seed for distribution is being produced in the West Indian islands of St. Vincent and Dominica, as well as in Ceylon.
JOS. BURTT DAVY,
University of California, Berkeley.

California Wild Flowers.

TO THE EDITOR:—Can you tell me the name of a good book on California wild flowers? I should also like to know the name and genus of the enclosed flower. I fancy it may be an anemone. It was found near a creek in the pine hills of Redding.—MARIA WYNDHAM, Redding.

TO THE EDITOR:—The plant sent by Mrs. Wyndham is *Gilia dichotoma*, Benth. It is of the family Polemoniaceae and is one of our common spring annuals.

The best book for the purpose of readily naming our common wild flowers is Rattan's "Popular California Flora," sixth or seventh editions, Bancroft & Co., San Francisco, 1885; or Parsons & Buck's "Wild Flowers of California" (illustrated), Doxey, San Francisco. Neither of these books is complete, however, one omitting several important and large families, the other only treating of a few of the more prominent species. Prof. Jepson has ready for the press a "Flora of Western Middle California," which takes in all the plant families represented in the region and all the species known to him as occurring within its limits. This we expect will be out by next Christmas.
J. BURTT DAVY,
Berkeley.

Seeds, Plants, Etc.

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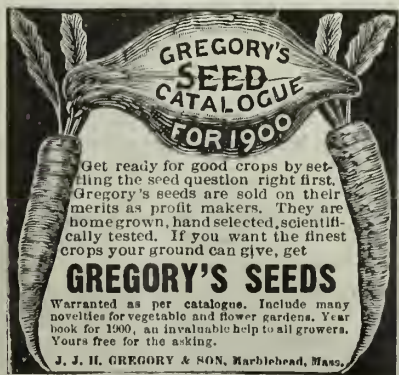
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To THE EDITOR:—In traveling over the State I have had my eyes open. I find that the best use is not made of our soil, climate, forests and water. Our wheat fields have been cropped for so many years the yield per acre is decreasing. It is to be hoped the State Board of Agriculture will find the right fertilizers for our farmers and that they will learn to use them profitably.

SOWING ALFALFA.—I was impressed with a discussion in Union Grange in regard to the amount of alfalfa seed which should be sowed to the acre. One man was advised by a seed merchant to sow forty pounds to the acre. Some of the grangers thought twenty pounds would do, and some said fifteen pounds were enough. The conclusion was that if the ground were thoroughly pulverized, made fine and even and good seed used fifteen pounds would do. Too much emphasis cannot be given to the proper preparation of the soil and the selection of the best seed. One man was able to raise three times as much wheat to the acre as his neighbor by deep plowing and finely pulverizing the soil.

I found garlic, onions and carrots growing rapidly on well-tilled land and fine peach and pear trees near by. Water was in abundance not more than twenty feet from the surface. The pear trees did not bear paying crops. The peaches have borne well. Now, farmers, what would you do with that land?

Hops are low—shall we plow up our hop yards?

I found some apple trees ready to die. I'll not say where, and on examining them found them covered with pernicious scale and I gave the remedy.

In some places small fruit growers have no trays and no way to dry their peaches and other fruits. They have been advised to form a fruit union like the unions in Santa Clara county, and also to join the California Cured Fruit Association and do it at once.

Along the river banks I saw bare fields, except for weeds, that were being plowed under, not more than a week ago, while a half mile away there was a large pumping plant and a field of thick alfalfa that was most ready to be cut. The water was pumped from the river. Almonds, vines, peaches and alfalfa seemed to do better than anything else.

The lesson is: Make the best use of every acre of land. Do not go along in an old rut to ruin when your neighbor is getting rich by studying the conditions. Join the Grange and educate the farmer, and then he will know how to care for the farm. "In the beginning God made agriculture honorable and it is our duty to sustain it as such."

San Jose. G. W. WORTHEN.

Topic for Discussion in the Grange.

POSTAL SAVINGS BANKS.

To THE EDITOR:—Is legislation providing for the establishment of postal savings banks by the United States government desirable?

The establishment of postal savings banks by a government is no new thing, for such banks have been in successful operation in several European countries for years, and have become a permanent feature of the financial policy of those governments. A postal savings bank is an arrangement made by the government whereby the postman-

ter, or some person designated by the government in connection with the post-office, is authorized to receive money of individuals or of corporations, guaranteeing a certain rate of interest upon all money deposited and guaranteeing principal and interest. The rate of interest would be exceedingly low, but the absolute safety would in some degree compensate for the low rate. The advantages claimed for such institutions are absolute safety of deposits, convenient and near-by place of deposits, encouragement for frequent deposits, however small, and the development of habits of thrift and economy among young people. The latter is greatly promoted by the spirit of rivalry that would exist among the boys and girls as to which should deposit the greatest sum in a week or a year, and thus firmly establish habits of thrift, industry and economy. The objections raised are the expense on the part of the government in arranging to receive and forward the amount deposited, and the difficulty in finding a profitable use for it. The latter is the most important objection. It has been the practise of governments from the time of their formation to hire money of individuals or corporations to meet the necessary expenditures for public improvements, in the development of the country, and to provide for the exigencies that have arisen in the case of war, pestilence or famine. Our own government is now paying interest upon hundreds of millions of dollars, mainly to wealthy corporations, and a higher rate than the money would probably cost gathered up from the common people through the medium of the postal savings banks. This certainly would have afforded a use for a portion of the money, had it been deposited, at a probable saving to the government, with the further advantage of having a vast number of the inhabitants of the country financially interested in its welfare and in sustaining the national credit. We do not offer any suggestion as to the use of the balance, but feel sure that the low rate of interest deposits would bear would afford an opportunity for the government to make some profitable use of it. The great advantage of having millions of citizens of the United States creditors of the government, and therefore financially concerned in its business as a government, would be a strong support in the event of any threatened overthrow or national disaster. The adoption of this plan would not displace national or savings banks, but would probably curtail, to some extent, their business.

Postal savings banks have been in operation in Hawaii since 1886, and, as in every other country where fairly tried, they have proven successful and greatly beneficial to the people. It is stated that the deposits in these banks at the present time amount to over \$1,000,000, which is about \$10 per capita to the population. The working classes in the islands have profited by the existence of the banks, and through them considerable sums of money, which otherwise would have been hoarded, have been placed at the disposal of trade and industry.

The Hawaiian commissioners advise the abolition of the savings bank system in the islands and the closing up of the institutions by making repayments of deposits as soon as practicable.

The proposal to abolish them is due to the fact that we have no postal bank system in this country, and the commissioners deem it advisable to make the postal system of Hawaii harmonize with our own.

What necessity there is for enforcing harmony or uniformity in the case is

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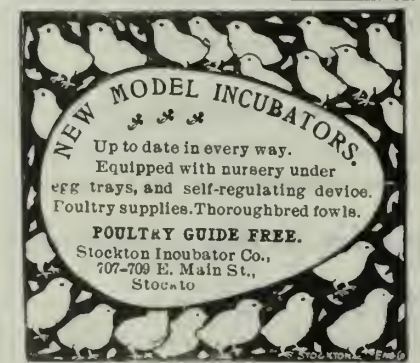
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Horse Ailments

not strikingly evident. There are a great many points of administration yet to be discovered, as our governmental relations with our new dependencies shall take form, which can not and ought not yet awhile to be made uniform with what we are accustomed to in the States. Furthermore, if uniformity in the conduct of postal matters is desired, Hawaii is in this instance distinctly in advance of the United States, and it would be far better to at once devise a postal savings bank system for the nation, and all its dependencies, than to set Hawaii back in the scale of progress in order to bring her postal system down to the present lower level of our own.

There has long been an agitation in this country in favor of postal savings banks, and several postmasters general have recommended them.

Petitions for this legislation should be addressed to the Congress of the United States, requesting legislation establishing a system of postal savings banks, and with signatures of all members interested in securing such legislation should be sent to the legislative committee of the National Grange, 514 F street, Washington, D. C., immediately after the discussion of the question.

J. S. TAYLOR,

Lecturer California State Grange.
Napa, Cal.

Death of Bro. Moses Sprague.

Many Patrons will remember with

interest Bro. Moses Sprague, an old member of Sacramento Grange, who died March 16th. Bro. Sprague was upwards of 80 years of age and had resided in Sacramento since 1852, widely known and respected. His funeral was held on March 18th, followed by cremation in this city, his son and his son-in-law, Bro. Walton of Yuba City, attending the remains.

THE VETERINARIAN.

Answers by Dr. Creely.

WOLF TEETH AND EYE TROUBLES.

TO THE EDITOR:—I desire to get, through the medium of your paper, an opinion from Dr. Creely (and I am satisfied it would be of interest to many subscribers) respecting the ailment of a horse.

I have a mare, eight years old, not particularly valuable, except for family use, that has been for several years hard to keep in good condition; bred, not getting in foal; ran out all last spring and summer in good feed, caught up in fall, looking worse than when turned out. I noticed that she was running at the eyes and falling in sight, and examined for what are called wolf or blind teeth. I found (as I frequently have before in other horses' mouths and knocked them out) one on each side, in front of and against the upper jaw teeth, protruding through the gums a quarter of an inch. I removed them, having no root, but resting on the jaw bone. It is said they press a nerve leading to the eye. Believing that to be the cause of the trouble, I expected improvement, but such did not prove to be the case, and she is now nearly blind, has precarious appetite and keeps looking badly. As I said before, I have removed such teeth under similar circumstances, and all with good results. I then examined another driving horse that was particularly hard to keep, and removed one with root a half inch long and seemingly broken off in the jaw bone (none on the other side). That horse has got fat and is as playful as a colt, where before he was very dumpish. I have all the teeth yet. The mare keeps in about the same condition, viz., almost blind.—R. H. BLOSSOM, Blossom, Cal.

Wolf teeth are simply excess teeth and have nothing to do with the eyes. A great many horses have had them for years and the sight was always perfect. In years gone by horsemen and uneducated farriers would see a horse with sore eyes, examine the mouth, find a wolf tooth and imagine they had found the cause of all the trouble. At any rate, your horse requires the services of a first-class veterinarian to cut down projections on the molars, which interfere with proper mastication. Have your family physician see and prescribe for the eye. The eye of man or horse is practically the same and the treatment for similar disease in the eye of man or horse is the same.

MULE WITH LA GRIPPE.

TO THE EDITOR:—What is the matter with my mules and what shall I do for them? They were taken, first, dull and stupid, then commenced to discharge at the nose, had sore throats, and got lame—so lame that they will not use one leg for a while, but gradually get over the lameness but still remain dull. Some of them have swollen joints. One of them is swollen along the abdomen.—E. H. WAKEFIELD, Livingston.

Your mules have rhino adenitis—la grippe. Apply to the throat externally once daily the following liniment: Olive oil 8 ounces, turpentine 2 ounces, spirits camphor 2 ounces, strongest water ammonia 2 ounces; mix.

Also give two tablespoons on tongue four times daily, spread on with a flat stick: Quinine 1 ounce, chlorate potash 6 ounces, sulphate iron 2 ounces, powdered borax 2 ounces, nitrate potash 4 ounces, molasses 1 pint; mix.

E. J. CREELY, D. V. S.
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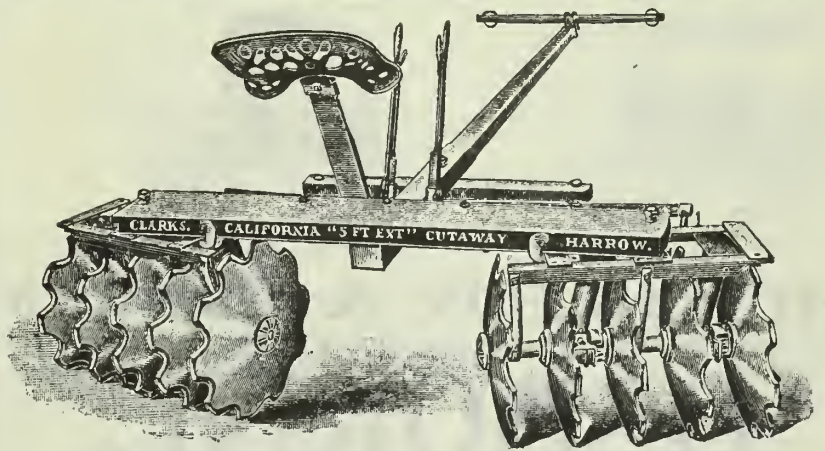
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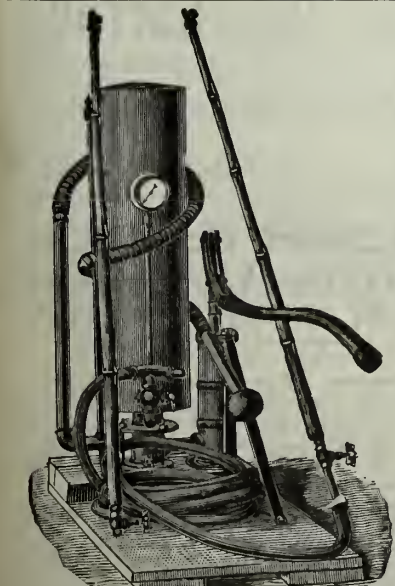
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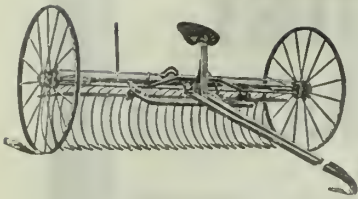


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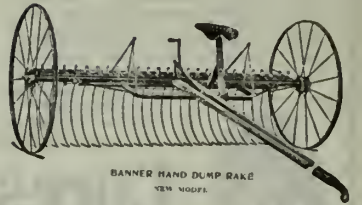
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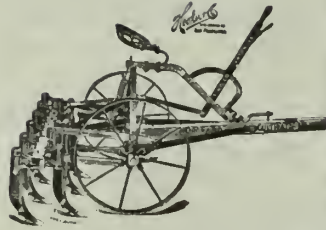
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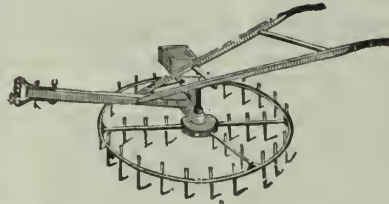
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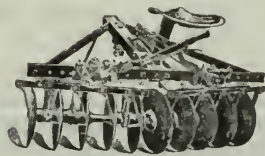
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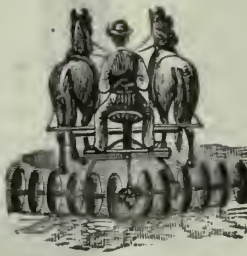
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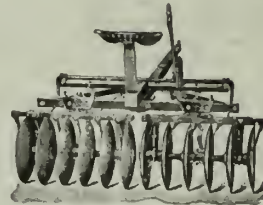
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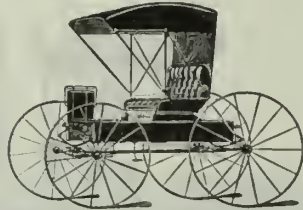
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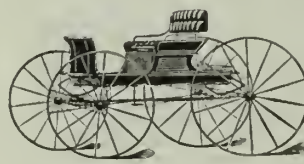
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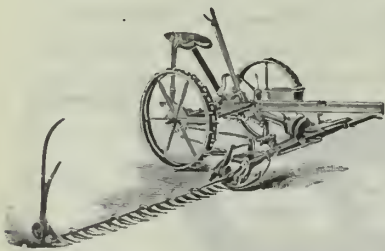
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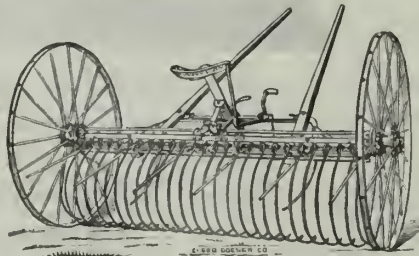
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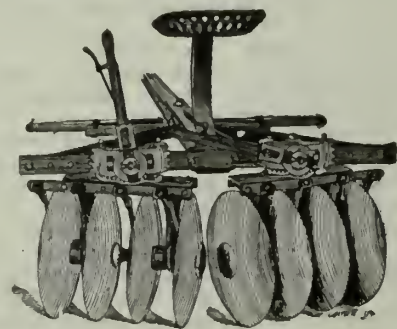
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Vol. LIX. No. 13.

SAN FRANCISCO, SATURDAY, MARCH 31, 1900.

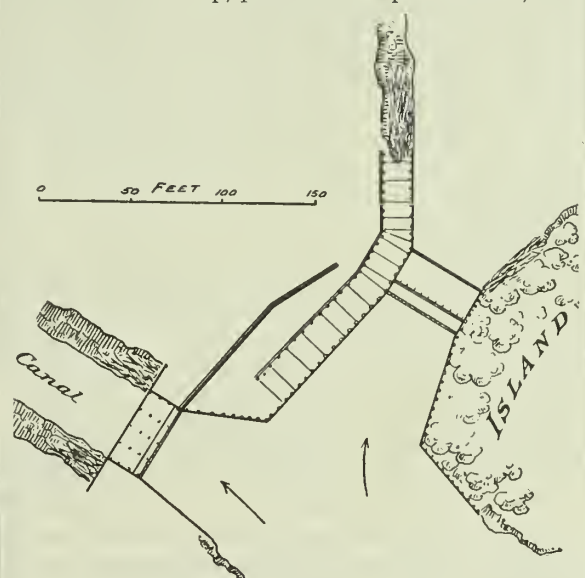
TWENTY-NINTH YEAR.
Office, 330 Market St.

A San Joaquin Valley Canal.

Our engravings on this page relate to some of the details of an old canal of the San Joaquin, which is especially interesting now because of notable improvements which have been recently secured by means of its waters. The canal and its history are interestingly described by C. E. Grunsky in Water Supply Papers No. 19 of the U. S. Geological Survey. The Survey's irrigation work has been very energetically pushed by F. H. Newell, hydrographer in charge, and the publications are of wide interest in the development of the arid region of the country.

We are especially attracted by the notice of the San Joaquin and Kings River canal because of the second childhood to which we have alluded. Mr. Grunsky shows that its history is very eventful and probably not widely known at the present day. It is one of the most important of the canals in San Joaquin valley. It commands a large portion of the west-side plain. Its head is just below Las Juntas, the point where Fresno slough unites with the San Joaquin river, about $9\frac{1}{2}$ miles above Firebaugh. At that point a small island divides the river into two channels, of which the lesser one, about 50 feet wide, lies at the west. Into this lesser channel a structure with falling dam, 47 feet between side walls, has been built to facilitate the passage of steamboats. In the other channel a brush diverting dam about 350 feet long is maintained, which holds water at all stages about 6 to 8 feet above the river's natural low-water plane. The inflow into the canal is controlled by means of a gate $47\frac{1}{2}$ feet between walls, which is bridged over. The space between walls is subdivided

farm of its own. The land selected for farming purposes was very carefully prepared for irrigation, and the water was to be brought to the soil from irrigating ditches in a system of cross furrows. The experiment, involving the introduction of methods that may be successful in India, where labor is abundant and cheap, proved a complete failure, and



Details of Head Works of San Joaquin & Kings River Canal.

seems to have brought the entire canal project into temporary bad repute. While the affairs of the canal company were thus in a deplorable condition, it was easy for the firm of Miller & Lux to acquire a controlling interest in the canal stock and to become in

time practically the sole owners of the canal. This firm had already made special contracts for water for their extensive holdings at rates below those to be established for other water takers, granted in return for right-of-way concessions, and it was soon apparent that the successful operation of the canal would depend upon them alone.

Although the general demand

for water did not increase rapidly, and although comparatively few of the renters of land from Messrs. Miller & Lux succeeded in making sufficient profit to purchase the lands farmed, the consumption of water from the canal gradually increased, the increase being notably due to its extensive use on alfalfa and pasture lands of the big cattle firm, and reached about 34,000 acres in 1882 and 1883. The area to which water is actually applied varies, according to the character of the season, within wide limits. It was only 14,000 acres in 1886 and 12,300 acres in 1890, because the preceding winters were wet. It reached 38,600 acres in 1894, and may be rated at about 27,000 acres on an average.

The main canal was originally constructed with a bed width of 28 feet, a depth of 4 feet, and side slopes of 2 to 1. Its gradient was fixed at 1 foot to the

mile. It was soon found that these dimensions gave the water greater velocity than the light soil of the banks could stand, and to prevent erosion their slopes were reduced 5 to 1. The disadvantage of this very flat slope manifested itself some years later, when reeds, weeds and mosses took root in the shallow water at the edge of the water surface and gradually encroached upon the deeper water, rendering it necessary to keep men at work during the summer cutting out the rank plant growth, and making it very difficult to force a full supply of water to the lower canal sections. Among the appliances used to cut weeds, particularly one trailing species, the most successful was a long chain dragged upstream by means of horses, generally one on each bank.

About ten years ago it was finally decided to clean out the canal thoroughly and at the same time to cut its banks as nearly vertical as possible. This was done with excellent success. The canal bed was made 45 feet wide, with its sides practically vertical, and the water depth was increased to 6 feet. The soil of the banks, impregnated with the mud deposits from the canal water and rendered resistant by the roots of plants which had penetrated it in all directions, showed no further tendency to erosion, and the great inshore depth of water, as well as its velocity, retarded the growth of plants.

Below Los Banos creek the fall of the canal was made only 6 inches to the mile. This 6-inch fall practically commences two miles above Los Banos creek, as for some reason the grade line of the canal bed was raised 1 foot at that point. Experience on this canal seems to justify the conclusion that for a canal

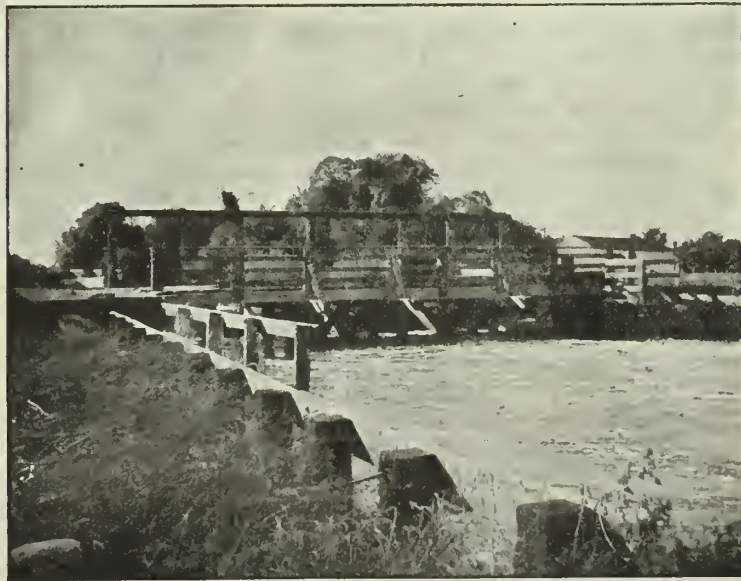


Downstream View of Regulating Gate of San Joaquin & Kings River Canal.

by gate and bridge posts into six divisions, each of which can be closed by means of drop timbers. Both up and down stream views of this construction are shown in the pictures.

This regulating gate and the steamboat chute required much pile work and sheet piling to afford them support and protection, as shown in the outline drawing.

The construction of this irrigation work commenced in 1871, and in that year the canal was excavated to Los Banos creek, a distance of thirty-eight miles. It was extended in 1877 and 1878 to Orestimba creek, and its present terminus is but a few miles farther south. Canal construction was undertaken by a corporation which proposed not only to supply water to irrigators, but also to make a practical demonstration of the advantages of irrigation by operating a



Upstream Aspect of the Same Construction.

of its size a slope as light as 6 inches to the mile may safely be adopted.

The rapid fall given in the first building of the canal naturally reduced the area of land below it. Recently a supplementary high-line canal has been constructed which greatly increases the capacity and efficiency of this canal system. This new canal leaves the original canal about three miles below its head and gradually separates from it, being carried on a grade of only 6 inches to the mile. It has a bed width of about 45 feet and is generally about one mile distant from the main canal, with which it is connected by means of a number of short branch ditches. This has largely increased the irrigable land westerly from Los Banos and contributes greatly to the resources of that actively growing town

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E. J. WICKSON..... Horticultural Editor.

San Francisco, March 31, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Details of Head Works of San Joaquin & Kings River Canal; Downstream View of Regulating Gate of San Joaquin & Kings River Canal; Upstream Aspect of the Same Construction, 193.
EDITORIAL.—A San Joaquin Valley Canal, 193. The Week; Dairy Education in California; Miscellaneous, 194.
QUERIES AND REPLIES.—Pear Scab and Bordeaux Mixture; Sorghum for Syrup; Whitewash for Young Trees; Removing Root Knot; Those Peach Buds; Bermuda Grass; Pomelo, 195.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending March 26, 1900, 195.
STATE BOARD OF AGRICULTURE.—California Agriculture in 1899, 196.
AGRICULTURAL SCIENCE.—Agricultural Education, 196.
THE DAIRY.—Food Value of Oak "Moss;" Food Value of a Tall Tarweed; Against Oleomargarine Again, 197.
THE POULTRY YARD.—Poultry in the San Joaquin, 197. A Salinas Poultry Woman; Conference Corner, 198.
THE IRRIGATOR.—The Census Inquiry, 198.
FORESTRY.—The Grazing Proposition; Forestry Schools, 198.
AGRICULTURAL REVIEW.—199.
THE HOME CIRCLE.—Dickens in Camp; The Town Reprobate, 200. Fruit for Brain Power; A Characteristic Anecdote of Roosevelt; Drinking Hot Water; Domestic Hints; Hints to Housekeepers, 201.
THE MARKETS.—Produce Market; Fruit Markets, 202-203.
THE VETERINARIAN.—Answers by Dr. Creely—Cow 'In a Bad State; Treatment for Thrush; Horse with Cough; Cow with Jaw Swellings, 204.
PATRONS OF HUSBANDRY.—From the Worthy Master; How Shall We Advertise Our Grange and Its Benefit to Farmers? 206.
THE APIARY.—Blitter Honey, 207.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 205. The Forest Area, 207.

The Week.

Southern California enjoyed a monopoly of the showers this week and is to be proportionately congratulated. The same sort of dispensation, even in somewhat more liberal degree, would now be very acceptable in other parts of the State. March has been rather too dry and now throws the burden of pulling out the grain crops upon April. The average for the month for the last twenty-nine years at San Francisco has been nearly 2 inches, but the range has been from $\frac{1}{10}$ inch up to 10 inches, so we can expect almost anything. Fruit is coming on fast and in some things promises to be up to the earliest date of ripening. Freedom from frost injuries thus far has been a great blessing.

The death list this week includes another widely known California fruit grower, Rev. C. F. Loop of Pomona, a distinguished promoter of the olive interest. He was a '49er and pioneer of the Santa Clara valley, but for the last twenty years had lived in Los Angeles county. As a citizen he was a man of great liberality and enterprise.

Wheat is still a little better on speculation, but spot wheat has not improved. Two cargoes have gone to Europe and a great steamer load for Chile. Barley is a shade firmer, but unchanged. Corn is firm for Eastern but weak and unsettled for Californian. Hay is no better and millstuffs unchanged. Beef and mutton are as before, but hogs are firm at the last decline, Eastern pork being held back by advance at Eastern points. Chickens are lower, except for large young stock. Dairy products are lower and weak, while the large receipts of eggs are being put into cold storage or packed to maintain values. The bean market is strong, with especial firmness in white beans. Potatoes are still overstocked with poor and scarce in choice, while onions are in light supply and high. Spring vegetables are doing better than last week. Large prunes are offered at lower rates. Spring wool receipts are increasing but too few sales to fix prices.

For the seven months from July 1, 1899, the Southern Pacific Company's total operating expenses were \$23,957,842, and total earnings in excess of operating expenses \$14,209,895.

A BOX CAR that cost \$457.17 in 1898 now costs \$583.25; a locomotive costing \$11,756.92 in 1898 now costs \$14,497.99.

Dairy Education in California.

Mr. R. A. Pearson, assistant chief of the dairy division of the Department of Agriculture at Washington, has just published a pamphlet entitled "Notes on California Dairying," which will have the effect of making our dairy resources and opportunities better known to the country at large. It deals with observations made by Mr. Pearson during his visit to the State last autumn and portions of the proceedings of the dairy convention during the last State Fair, which are already familiar to readers of the PACIFIC RURAL PRESS. The portion of the pamphlet which is, perhaps, most suggestive, and will be most helpful in the promotion of measures which have long been urged, is the allusion to dairy education in this State. His point is that although a prominent dairy State, producing a large amount of butter, milk and cheese, California has made no direct appropriation for a dairy school. According to statistics, California ranks seventeenth in cows, seventeenth in butter and ninth in cheese. Yet there are thirty-four States in the Union which have special dairy instruction and California's name is not on the list. The result of this is that our dairy industry is held back from proper advancement. Fully trained men are not available in sufficient numbers, and the distance to the Eastern dairy schools is so great, and the incidental cost to pupils so high, that Californians are practically prevented from taking the instruction which they desire.

The position taken by Mr. Pearson is slightly unjust, it seems to us, in that it does not give adequate credit to the educational work in the dairy line now being prosecuted by the University of California. As a matter of fact, several lines of dairy instruction which are followed in all "dairy schools" are now provided for at the University: the instruction in the principles of breeding the development of dairy qualities in certain breeds and the improvement of common stock by grading with dairy sires; the growth of forage plants adapted to this region and the value of the silo in California dairying; the principles of dairy feeding and the science and practise of balanced rations; the chemistry of milk and milk products and the practise of milk testing—all these, and other connected branches, are now taught in the College of Agriculture at the University with fair equipment and illustrative material. We believe that a comparison of courses with other institutions would clearly show that the University of California, both by means of its instruction at Berkeley and by means of Farmers' Institutes, which are rich in dairy discussions, is doing as well as any institution in the country where the equipment of a dairy school has not been provided by ample appropriation of State funds for this special purpose. There may be States in which dairying has had greater relative attention because the State had fewer other agricultural interests which could be profitably promoted, but these should not be cited to the detriment of California, where such a breadth of resources and capabilities, pressing for development, has reduced the relative attention to dairy work.

But though we think Mr. Pearson has given too low a grade to our California standing in dairy education, that does not necessarily destroy the force of his argument, which we are quite ready to admit. California has not done enough for dairy education and it should do more as soon as possible. All who have given attention to the subject urge this. The Regents of the University have carefully considered the matter at the request of the dairy interest and Professor Hilgard has repeatedly advised additions to his force of instructors to more adequately cover the local animal industries, but the Regents have not been able to find funds for the purpose. That seems to be about the condition of affairs as nearly as it can be made out.

It is almost incredible to Californians what amounts of money States east of the Rocky mountains appropriate for dairy purposes; \$30,000 to \$50,000 for building and outfit is a medium figure. There are cases in which nearly \$30,000 has been appropriated for barns. A committee of the California Board of Regents once commended \$10,000 as a sum upon which a good start could be made, but they were discouraged from asking even for this by the attitude of the Legislature toward such appropriations. Certainly something must be done to maintain our dairy

standing. It is true that there are more men available each year from Eastern dairy schools, but they have to master the local situation before they are on safe ground. Then it is not right for the State to depend upon such imported help when so many of our own men and women could easily master the advanced art of dairying if they had a chance for the instruction.

The University of California could be fitted out for special dairy work at light cost. As we have said, several leading branches of instruction are already provided for, but certain others are necessary not only for their own work, but to make the others available as parts of a proper system. We are glad that Mr. Pearson has written rather strongly on this subject. It may help us to wake up to our own neglect and deficiencies.

We have become quite accustomed to speak of stock cattle, sheep and hogs as "feeders" when they are moved from the range to finishing points. The fact that there are feeders also in poultry lines may not be so well known, and yet the State Department publishes a report from Commercial Agent Johnson at Stanbridge, Canada, which shows that 8000 to 10,000 live geese were shipped from Canada last fall to the poultry yards of Charles M. Austin of Mansfield, Mass., for feeding purposes. There have been seen at Sabrevois, in the Province of Quebec, as many as 11,500 live geese and 5000 live ducks at one time, and it takes 125 bushels of grain a day to feed them. The firm of S. H. Jones at Sabrevois has had at one time as many as 25,000 geese and 15,000 ducks. The American firms make most of their purchases in the townships of the Province of Quebec, New Brunswick and Prince Edward Island.

THE report of the Park Commissioners of San Francisco, which has just been issued, brings the park work up to the end of June, 1899, and furnishes a very satisfactory outline of the extension and improvement enterprises which have been recently secured or are still in progress under the able supervision of Superintendent John McLaren. Mr. McLaren has shown himself to be a very broad man, as well as a man of horticultural taste and executive ability. The present Commissioners—Messrs. A. B. Spreekels, Reuben H. Lloyd and John L. Stanton—are very devoted to their trusts and are giving freely of their resources to the promotion of the highest public interests in the promotion of educational and recreational excellence in the city's pleasure grounds. The report is adorned with a collection of colored plates of park views and should be widely circulated, to the credit of the city.

A MOVEMENT is being made by Congressman J. W. Stokes of South Carolina to require carriers of star mail routes to deliver and collect mail of parties living on or near the line of their routes. The postoffice department favors it and says the increased cost would be slight compared with the additional facilities rendered to the public. All it seems to need is a demand on the part of the people, and all interested should see to it that Congressman Stokes' measure does not fail for lack of popular support. Write him that you desire it.

It appears from correspondence between Ed. M. Ehrhorn of San Jose and C. R. Lounsbury, entomologist at the Cape Colony, that they have in South Africa natural enemies of the black scale which work so effectually upon it that the scale is hard to find, and, because their food is so scarce, the foes of the scale have a hard time to live and are therefore hard to collect. However, an effort is now in progress to secure these scale-destroying insects through the Secretary of Agriculture, which we hope may succeed.

THE California State Dairy Bureau will come into funds. Attorney-General Ford has rendered a decision in regard to the appropriations for the State Dairy Bureau that the Act of March 4, 1897, and the general appropriation Act of 1899 were not in conflict, and that the bureau is entitled to the \$5000 provided in each, making a total of \$10,000 per year. Now let us see how the dairy commissioners will get to work to spend that money for the greatest benefit of the dairy interest of the State.

QUERIES AND REPLIES.

Pear Scab and Bordeaux Mixture.

TO THE EDITOR:—What is the matter with my pear trees? I enclose a few leaves and you will see that they are affected. The young pears (not larger than a pea) have got the same thing on them. It is affecting the tips of the young shoots and the young leaves are just covered with it before they can open out. I sprayed these trees with a patented wash while they were dormant. Kindly tell me whether this blight is dangerous to the tree or not, and what remedy to apply.—H. W. W., Oleander.

The disease is the scab fungus of the pear and apple (*fusicladium dentriticum*). It is ruinous to both tree and fruit, for it affects fruit, foliage and young wood also. The remedy is the lime, salt and sulphur to kill the winter spores, applied while the tree is perfectly dormant. The summer treatment is Bordeaux mixture. Get it on as soon as possible, for the samples are unusually bad. This disease is not usually so severe in the interior as on the coast. In case all may not have it handy we give again the recipe for the Bordeaux mixture:

Lime, four pounds; bluestone (sulphate of copper), four pounds; water, forty gallons. Use part of the water to slake the lime and dissolve the bluestone, which should be done in separate vessels. The bluestone should not be put in a metal vessel. If put into a bag and suspended near the surface of the water it will dissolve more readily, or hot water may be used in making the solution. Both should be cold when mixed, and the resultant mixture will be a beautiful blue wash. If mixed hot a black compound (copper oxide) is produced, which reduces the value of the wash. After thorough mixing of the solutions water should be added to bring the bulk up to forty gallons.

Sorghum for Syrup.

TO THE EDITOR:—As I am desirous of planting a few acres of sorghum this spring for syrup, I wish to inquire what success Californians have had in growing and making syrup from sorghum, the variety of cane, and if you know anything of the African Im-pee variety, and if any of the seed can be procured. I have grown it in the East and found it superior to any other variety I ever raised.—NEW COMER, San Jose.

Sorghum syrup enterprises have, so far as we know, proved disappointing, unless the syrup producer could find a market for his product in his own region. Some have made quite a number of barrels and profitably peddled it to consumers or sold it to country stores. We have not heard of successful marketing in San Francisco. The available supply of cane sugar syrup and glucose preparations seem to fill the demand for that form of sweetening. Besides that there can be any amount of grape syrup prepared if there were call for it. So far as we have heard the Early Amber has been chiefly used in sorghum syrup ventures and this is, we believe, the only saccharine sorghum of which our seedsmen carry a stock of seeds. The non-saccharine or fodder sorghums are constantly increasing in popularity in this State, but the saccharine varieties are constantly decreasing in interest.

Whitewash for Young Trees.

TO THE EDITOR:—I have a young prune orchard; it was set out one year ago. I was thinking of whitewashing the trunks of the trees with the whitewash recommended in the PACIFIC RURAL PRESS of March 24th. I wish you would advise me whether it would be best to whitewash the young trees; and, if so, ought I to use the wash recommended for apple trees in the PRESS of March 24th, or should I use a wash made of air-slaked lime? I see your book on "California Fruits" recommends for young trees a wash made of whitening or air-slaked lime. I thought if I used whitening or air-slaked lime it might be hard to get the tallow to mix well with the wash.—READER.

We have not used this wash on young prune trees and can not speak with full confidence. We would not hesitate to try it, however, as we understand it is freely used on all kinds of trees. The tallow will saponify part of the alkali and thus reduce the causticity to a certain extent. The whitening or air-slaked lime wash needs whaleoil soap to give it greater adhesiveness, and it is usually made with that substance. We think the lime tallow and salt wash is a more satisfactory material.

Removing Root Knots.

TO THE EDITOR:—I have about 100 two-year-old prune trees that are affected with crown knot, or

root knot. Is it safe to treat them while growing? About a month ago I took the knot of one and applied a very strong solution of bluestone to the place, and now all the live bark, except a small strip on one side, is dead. It looks as though it had been burned. What is the best remedy and when the time to apply it?—A SUBSCRIBER, Saratoga.

The prescription formerly was to use bluestone during the dormant season and Bordeaux mixture during the growing season. More recently so many cases of injury by bluestone have occurred that Bordeaux alone is commended. As to the time of removing the knots we would be governed somewhat by the size: small knots any time, large ones when the tree has passed its greatest activity. There is still, however, a great deal more to learn about this whole matter.

Those Peach Buds.

TO THE EDITOR:—As to the peach buds dropping, the linnets may be answerable for a lot of mischief, but I think they are not guilty on this count. It is hardly likely they discriminate between Alexander's and Hale's buds; the Hale's, next to the Alexander's, are full of blossoms. In February, if a limb of the Alexander trees was shaken, there was quite a patter as the buds fell on the ground; the small trees have many more blossoms out than those much larger. Many people around here are doing away with their Alexander's owing to this drop. The subject is worth looking into again.—T. J. FITCH, Loomis.

Yes, indeed. This is quite different from linnet work and we are sorry you did not give the fuller description in your first note. Linnets work freely enough on Hale's, as we know to our own sorrow, and our experience also is that when a linnet or an English sparrow takes a bud he keeps it and does not leave it to patter down afterwards. They throw down blossoms sometimes, as it would seem, just for fun, but not unopened buds. We do not know anything about the trouble our correspondent notes and we would like to hear from any one who has looked closely into it.

Bermuda Grass.

TO THE EDITOR:—Please give some method for getting rid of Bermuda grass. It is about to take my orchard.—W. M. COLLINS, Visalia.

We have only one prescription for morning glory, Johnson grass, Bermuda grass and all other joint-rooting plants, and that is to smother them by never allowing a shoot to come to the light. Get a good flat weed knife or a cultivator with sharp, flat teeth and start in as soon as the ground will stand it and cut off every shoot below the surface. Run through again in a week and every week afterwards until the ground gets out of condition in the fall, or until there is frost enough to prevent growth. The secret of success lies in never allowing the plant to come up so you can see it. If it gets to the light, it takes a fresh start and you have to take a fresh start too. Cultivate the piece, therefore, with sharp, weed-cutting edges on the same day of every week, and keep at it all summer and perhaps the next summer also.

Pomelo.

TO THE EDITOR:—I am thinking of planting a few pomelos for family use. Which is the best variety?—F. J. FITCH, Loomis.

The Florida seedlings have come nearer to suiting the demand than others, and are presumably most nearly in accord with advanced standards of taste in this line. The Triumph is approved by some growers. Do not plant more than you can eat up yourself. There are too many in the State already.

THE California Cured Fruit Association makes a new appeal to the prune growers to get in line and sign the contracts. Vice-President Henry calculates that at the beginning of this week about 70% of the prune product had signed up, and packers had affiliated in sufficient number to absolutely obviate the necessity of the Association doing anything in that line. The backbone of the fight is acknowledged to be in the Santa Clara valley. It is there that the opponents of the movement are using their utmost efforts to defeat the organization. The trouble seems to be with some packers who agreed to a contract and then refused to sign it and are trying to hold growers out with them. If growers want to run their own business, let them give their support to the Association at once.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 26, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

COAST AND BAY SECTIONS.

The temperature has been slightly above normal for the week; no injurious frosts have occurred. The rainfall of the 19th and 20th was light in valleys, but heavier in the elevated sections, and has benefited all growing crops and pasturage. Grain and hay are making good growth and looking strong and thrifty in most sections, but would be greatly improved by heavy rain within the next two weeks. The first crop of hay was cut on the 17th, near San Luis Obispo. The soil is in good condition for working. Fruit prospects continue good, and nearly all varieties are in bloom, the trees being heavily laden. San Leandro cherry orchards are in full blossom. All sections report deciduous fruits in superior condition, with indications of unusually large crops.

SACRAMENTO VALLEY.

The weather has been very favorable for all crops, the temperature averaging several degrees above normal, with light northerly winds and no frost; in some sections there were light showers early in the week. Grain and hay are growing rapidly, and are in excellent condition, with all indications that unusually large crops will be harvested. In some localities, however, it is said the grain crop will not be as large as last season's, owing to the excessive moisture on the black or adobe lands early in the season. Hop roots have wintered well and are looking well. The soil is in good condition for plowing, and some farmers are engaged in fallowing. Deciduous fruit trees are in full bloom and bearing heavily. In some localities apricots are quite large, and seem to be nearly beyond injury by frost, but are dropping in some orchards. Orange trees are in bloom. Almond trees are heavily laden, but there is some danger of dropping, as it is feared the sap rose too early. Strawberries will be in market next week.

SAN JOAQUIN VALLEY.

Generally clear weather, with warm days and cool nights, has prevailed during the past week. On the 22nd a light thunderstorm with rain occurred in the vicinity of Porterville, doing much good to all growing crops. While there is no immediate suffering from the lack of moisture, more rain is needed in the upper portion of the valley to mature grain. Crops of all kinds are doing well. Barley is commencing to head in some localities. Pasturage is plentiful. Fruit trees are in full bloom, and trees are rapidly leafing out. Prospects are excellent for a large fruit crop. Fallowing continues on the black lands. Farm work of all kinds is well advanced. Grapes are commencing to leaf in the vicinity of Lodi. Shipments of sheep and wool continue. Hay continues to be shipped from the upper portion of the valley to Arizona.

SOUTHERN CALIFORNIA.

Cloudy, damp weather has prevailed during most of the week, with fogs in some localities, and no injurious frosts. Light showers of rain have fallen in the valleys; in the foothills and higher lands the rainfall has been sufficient to greatly improve the condition of crops, over an inch having fallen in portions of San Diego county. Snow has fallen at Cuyamaca and other mountain stations. Conditions have been favorable for all crops, and it is now believed that a small grain crop will be raised, some reports stating that with normal rains in April the yield will be about half the average. Pasturage is still fair in most sections. Beet lands are being irrigated, preparatory to planting. Deciduous fruits are in bloom, and prospects for large crops continue good, though apricots are dropping in some orchards. Almonds are said to be half grown. Walnut trees are leafing. Water development continues.

LOS ANGELES SUMMARY.—Cloudy week with showers revived late grain, which may give small crop. Orange trees white with bloom, and vineyards looking quite green.

EUREKA SUMMARY.—Weather conditions for the past week were generally favorable for plowing, seeding and for fruit. The cool weather is fortunately retarding fruit bloom. No damage resulted from Friday's frost.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, March 28, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Minimum Temperature for the Week.	Maximum Temperature for the Week.
Eureka.....	.38	44.07	31.01	36.33	38	54
Red Bluff.....	T	18.81	18.57	21.46	40	74
San Ramon.....	.00	15.61	13.91	16.76	38	72
San Francisco.....	.00	17.02	15.35	19.59	46	66
Fresno.....	.00	7.68	6.64	7.73	38	78
Independence.....	.36	2.78	1.16	4.43	36	72
San Luis Obispo.....	.10	14.78	14.77	15.81	40	76
Los Angeles.....	T	5.55	4.79	15.26	42	74
San Diego.....	T	3.16	4.58	8.54	42	68
Yuma.....	.00	0.77	1.34	2.78	48	88

STATE BOARD OF AGRICULTURE.

California Agriculture in 1899.

NUMBER IV.

Report of the State Board of Agriculture, specially furnished for advanced publication in the PACIFIC RURAL PRESS.

BEET SUGAR.

Mr. Claus Spreckels of San Francisco has furnished the following report of the conditions of that great industry in California. California might well be proud of her development in this direction, in which she leads all States in the Union, with a promised development impossible to her competitors. Mr. Spreckels says:

The success that has marked the development of the beet sugar industry in California during the past ten years has been gratifying to those who have labored to that end, and who now see it firmly established as one of the leading industries of the State. The abundant evidence afforded of capital rapidly flowing in this new direction attests the value and adaptability of California soil and climate to the culture of the sugar beet. New factories are being built and the capacity of many now in operation doubled. Thousands of acres are being planted to beets which heretofore were devoted to grazing and grain raising. They will not only yield greater returns to the farmer, but will give employment to a vastly larger number of laborers.

One of the most important benefits which will accrue to the State is the growth of the towns in the vicinity of and where sugar factories are located, the cutting up and populating of vast tracts of land, and the immigration of the practical farmer to California.

Many sections of the country are well adapted to the raising of sugar beets, but California surpasses all other States in possessing a combination of all the conditions suitable to the industry, whether as regards soil or climate. The length of the season enables the beets to ripen and the crop to be harvested earlier than elsewhere, a great advantage to both farmer and manufacturer. The mildness of the winters on our coast renders it unnecessary to store the beets in silos, an item of expense that must be incurred wherever the winters are severe.

The greatest feature of California's superiority in this new industry is to be found in the beet itself. The average percentage of saccharine matter often exceeds 15% of the gross weight of the beet, whereas in other States 13% is considered an exceptional return. Thus it will be seen, with the many natural advantages possessed by the State, the energy shown, and the capital invested, the day is not far distant when the raising of the sugar beet and the manufacture of sugar will be the leading industry of California.

From the following table, showing the sugar production, an idea can be gained of the rapid progress California has made during the past ten years, the figures given being short tons:

	Western Beet Sugar Co.	Alameda Sugar Co.	Chino Valley Sugar Co.	Los Alamitos Sugar Co.	Cal. Beet S. & R. Co.	Total.
1888.....	1,452	458				1,910
1889.....	1,585	872				2,457
1890.....	2,128	1,403				3,531
1891.....	2,183	891				3,074
1892.....	5,634	1,253				6,887
1893.....	7,645	2,243				9,888
1894.....	11,935	2,955	3,725			18,615
1895.....	10,786	2,700	10,341			23,827
1896.....	19,185	4,679	7,951			31,815
1897.....	14,671	5,089	12,020	3,500		35,280
1898.....	7,048	3,689	6,063	300	1,200	18,300
Totals...	84,252	26,323	40,100	3,800	1,200	155,584

It is well to compare the above statement with the following figures, showing production of the different States, the figures also representing short tons. The advancement of California at once becomes apparent:

	1894.	1895.	1896.	1897.	1898.	1899.*
Colorado.....						3,400
Illinois.....						3,400
Michigan.....					2,800	36,000
Minnesota.....					1,230	4,000
Nebraska.....	2,971	4,950	8,960	7,230	5,660	10,500
New Mexico.....			1,200	590	1,120	2,200
New York.....				420	1,800	3,600
Oregon.....					740	2,000
Utah.....	2,354	4,032	4,567	1,760	6,385	8,800
Virginia.....	25					
Washington.....						2,300
Totals...	5,350	8,982	14,727	10,000	19,335	76,200

* Estimated.

The operating beet sugar factories of the State are located as follows: Spreckels Sugar Company, Spreckels, near Salinas, Monterey county; American Beet Sugar Company, Oxnard, Ventura county; Chino Valley Beet Sugar Company, Chino, Riverside county; Alameda Sugar Company, Alvarado, Ala-

meda county; California Beet Sugar & Refining Company, Crockett, Contra Costa county; Union Sugar Company, Santa Maria, San Luis Obispo county; Los Alamitos Sugar Company, Los Alamitos, Orange county.

Operations have been suspended at the large factory at Watsonville, owing to the short crop of beets. The monster factory at Spreckels is doing the work of the Watsonville plant.

ESTIMATED OUTPUT—SEASON 1899.

	Short tons.
Spreckels Sugar Co.....	25,000
American Beet Sugar Co.....	10,000
Alameda Sugar Co.....	4,500
Chino Valley Beet Sugar Co.....	6,000
California Beet Sugar & Refining Co.....	3,000
Union Sugar Co.....	3,000
Los Alamitos Sugar Co.....	1,000
Total.....	52,500

The extreme drouth which the State has suffered during the past two years has seriously interfered with the progress of the industry. With a favorable season it is reasonable to predict an output of more than 100,000 tons of sugar in 1900.

The beet sugar factories of California represent a combined capacity of 9500 tons of beets daily (estimated capacity), which would mean, for a season of 135 days, 1,140,000 tons of sugar, more than enough to supply the Pacific coast.

In California there are more than 750,000 acres of land perfectly adapted to the raising of sugar beets. Allowing for the proper rotation of crops, about 200,000 acres would be available each season, capable of producing 2,500,000 tons of beets, or 350,000 tons of sugar.

The valleys of San Juan, Salinas and Pajaro have proven themselves especially adapted to the culture of the beet, and the following is a statement of the cost of raising and profits derived from 238 acres of beets in San Juan valley, season of 1896:

	EXPENSES.	Total cost.	Cost per acre.	Cost per ton.
Rent of 238 acres at \$7 per acre.....		\$ 1,666 00	\$ 7 00	\$ 37
First plowing, \$340 00.....				
Second plowing 396 65.....		1,236 65	5 19	28
Cultivating and harrowing.....500 00.....				
Sowing, labor... 85 00.....		113 80	49	03
Use of drill..... 28 80.....				
Seed, 2830 lbs. at 10c.....		283 00	1 19	06
Thinning, 1100 days at \$1.....		1,100 00	4 62	25
Cultivating and weed cutting, one man and two horses, 30 days at \$3.....		90 00	38	02
Plowing out, one man and team, 95 days at \$3.....		285 00	1 19	06
Topping and loading into wagons, 1335.3 days at \$1.....		1,335 30	5 61	30
Hauling three miles to switch at 50c per ton.....		2,225 50	9 35	50
Freight on railroad to factory.....		2,225 50	9 35	50
Cost of knives and hoes.....		20 00	09	
Interest.....		300 00	1 26	07
Total expenses.....		\$10,880 75	\$45 72	\$2 44

	INCOME.			
4,451,275 tons of beets at \$4.....	\$17,817 22	\$74 86	\$4 04	
Sale of beet tops.....	200 00	84	04	
Total income.....	\$18,017 22	\$75 70	\$4 08	
Net profit.....	\$ 7,136 47	\$29 98	\$1 64	

From a survey of the foregoing facts the great importance of this rapidly growing industry will be clearly apparent.

Thus it will be seen that the sugar beet industry presents a larger field and better results than any other agricultural pursuit in which the farmers of our State may engage.

HOPS.

California cultivates a large area of her best land to hops and sends the product all over the world. Our hop crop commencing with 1894 has been as follows:

	Bales.
1894.....	67,500
1895.....	52,000
1896.....	35,000
1897.....	45,000
1898.....	44,500
1899 (estimated).....	57,000

From figures obtained from F. V. Flint the crop of 1899 was estimated at 56,652 bales, and produced as follows:

Counties.	Acres.	Bales.
Sonoma.....	2,029	17,850
Sacramento.....	1,255	12,400
Yuba.....	885	7,000
Mendocino.....	840	8,100
Yolo.....	420	3,800
Alameda.....	360	3,136
Santa Cruz.....	325	2,800
Sutter.....	125	604
Lake.....	75	500

Napa.....	55	262
Shasta.....	30	175
Siskiyou.....	10	25
Totals.....	6,409	56,652

E. C. Horst of San Francisco, a very extensive dealer, in a report on this industry recently made to this Board, presents the situation so clearly that we present it here as dispensing with further comment. Mr. Horst writes:

California produces about one-third of the annual consumption of hops in the United States, and raises them on a combined area of less than four miles square.

In California the raising of hops is in the hands of a very few growers, whose average production is many times greater than that of the growers elsewhere, and the methods of cultivating, drying, euring and handling are here very far ahead of the methods employed in the other States of the Union and abroad.

One firm alone grows nearly 10,000 bales annually, or about one-sixth of the State's annual product.

There are altogether about 150 hop ranches in the State, which have about 7500 acres in hops, and produce annually about 60,000 bales, equal to 11,000,000 pounds, which is enough to make 15,000,000 barrels, or 60,000,000 kegs, of beer, when no hop substitutes are used.

Hops were first raised in California in 1865, and for several years thereafter were considered by some of the brewers to be much inferior to hops grown elsewhere, and bought only as bargains, and by all other brewers were considered entirely unfit for brewing purposes. The sentiment, however, has so completely changed that to-day the same California hops fetch the highest price, not only in the American, but also in the foreign markets, and they are exported to all parts of the world.

The qualities that have given California her reputation for hop culture are the absolute freedom from disease, the certainty of the crop and the excellent keeping qualities of the product.

In the thirty-five years of the industry there has never been a crop failure or even a serious shortage, and damages by the many pests which infect hops elsewhere are here unknown. The hops produced here hold their brewing virtues so much longer than those produced in the East and abroad that the brewers pay more for our product when purchasing hops for future use.

Hop growing has not, however, been a profitable industry during the last five years or more on account of lack of crop failures elsewhere, and the acreage has, therefore, not been increased.

The consumption has not been in excess of the product and low prices have ruled and will probably continue until England or Germany has a crop failure, or serious shortage, and this may happen at any time, though while the hop farmer of small means is waiting the sheriff is apt to get the ranch.

The land necessary for hop growing is the richest land, and, excepting in such seasons where there is a hop failure elsewhere, it pays better to raise other crops on such lands, especially as lands that will raise hops will grow any other crop that this State produces, and with more certainty of profit.

(TO BE CONTINUED.)

AGRICULTURAL SCIENCE.

Agricultural Education.

TO THE EDITOR:—I am glad to see Mr. Shields appearing in your columns as a contributor to a discussion on "Education." It seems to me a subject on which we are disposed to take too much for granted—to think that because certain ideas and methods have prevailed in the past, and because our teachers assure us that such ideas and methods are the very best in the world we must, perforce, accept these as being both desirable and efficient.

For years past I have been making leisure to study some of these methods and their apparent results. Sometimes I've visited schools, sometimes attended institutes, sometimes read, sometimes tried to think on education.

At one institute I heard the man who is perhaps the foremost educator on this coast tell the assembled teachers: "You don't use the education you sell!" This put the case rather baldly and boldly; but Truth is always bold and very often bald, or even naked, for I think a classic "nuda veritas" (naked truth) remains in my memory. Teachers, then, it should be remembered, sell education. It is eminently natural that they should recommend and exalt the wares they offer for sale. Shall the public at large accept those wares as being in themselves desirable and worth the price? If my "foremost educator's" words be true many teachers do not themselves believe their wares desirable. If desirable they would use them. They are alleged not to use them. To them, therefore, they are undesirable, if the allegation be true.

Apply the same reasoning to the taught. Do they

deem this education desirable? I shall be told "Oh, yes! Very many desire to graduate!"

I admit many "desire to graduate." But is it because the knowledge is pleasant to their souls, or because they appreciate triumph and popular applause?

"Desire to graduate" is no test. The real test is, has knowledge been made so pleasant to their souls that they desire to walk with wisdom in those ways of pleasantness and paths of peace that make life one continued happiness and success?

Now, then, apply the test! In our high school (Pacific Grove) Latin is made one of the chief studies. After graduation do we find our graduates taking any pleasure in pursuing that study and becoming really Latin scholars? Do we find the average person who has "taken Latin" (be the dose "taken" large or small) even endeavoring in the least, after graduation, to increase his knowledge thereof? I have questioned men and women in various ranks of life, and I have yet to find one who has seen any Californian reading a Latin book for pleasure. In thirty-five years I have seen no person, out of school, reading Latin, and only one man reading Greek. He sat on a bench in a tennis court at Pacific Grove, and proved to be an instructor in Greek at the University of California.

Of course I shall be told it's at least all good "mental gymnastics." I reply there are "mental gymnastics" better in all respects. There are "mental gymnastics" which the graduate will so enjoy that he will continue them through life.

As I have watched the results of our school methods in the after life of our young men and women, these results are usually disastrous. The graduate has "taken studies" till he has become nauseated, and hates and eschews study for the rest of her or his natural life. Will any candid observer tell us, in the *RURAL's* columns, whether in his village the library has one-tenth the patrons that the card-room, the dance hall and the saloon have? I want to see this subject thoroughly discussed, because not only to me, but to a great many, its present basis is extremely unsatisfactory.

What started me to write this, beyond Mr. Shield's letter, was some lines I ran across lately in a book by the leading philosopher of our age, Herbert Spencer. Speaking of the pleasures of the parental relation rightly conceived and carried out (page 309 *Data of Ethics*), he says: "And then if, repudiating the stupidities of early education, as at present conceived and unhappily State-enacted, he has rational ideas of mental development, and sees that the second-hand knowledge gained through books should begin to supplement the first-hand knowledge gained by direct observation, only when a good stock of this has been acquired, he will, with active sympathy, aid in the exploration of the surrounding world which his boy pursues with delight; giving and receiving gratification from moment to moment while furthering ultimate welfare."

To cut this letter short I will only add that when girl or boy has learnt to pursue nature study "with delight," the boy will not want to leave the farm, and the girl will have better employments and enjoyments than dressing, dancing and novel reading. It is to me a source of intense satisfaction that Cornell University now has a professor of "nature study" in the person of Mrs. Anna B. Comstock, whom I had the pleasure lately to meet and bid "God-speed!" May other universities follow the lead of Cornell!

Monterey, March 24.

EDWARD BERWICK.

THE DAIRY.

Food Value of Oak "Moss."

TO THE EDITOR:—Throughout the coast mountains of California, wherever oaks abound, there is one fodder crop which never fails, however dry the season—the crop of moss, or, more properly, lichen (*Ramalia reticulata*), which grows so plentifully upon the branches of the deciduous oaks and, to a less extent, upon the live oaks also. Very picturesque, especially in winter, is the effect of the long, ragged streamers of grayish-green network pendant from the oak boughs. Nothing more accentuates the age of our larger oaks, many of which undoubtedly antedate the Pilgrim Fathers.

The "moss," as it is commonly called, is scarcely less useful than picturesque. Its value as a stock feed has long been known in a general way to stockmen, who have depended on it more or less to help cattle through dry seasons. In times of drouth oaks have been felled by hundreds, simply that the cattle might browse upon the mossy branches. In the Salinas valley, during the severe drouth of 1898, quantities of the "moss" were gathered from standing trees for cow feed.

More exact knowledge of the food value of this useful lichen becomes therefore a matter of interest. Prof. Jaffa of the University Experiment Station, Berkeley, recently analyzed some of it at the request of the writer, determining its percentage composition, which is given below in comparison with that of

wheat hay, also determined by the Experiment Station:

	Lichen (<i>Ramalia reticulata</i>).	Wheat hay.
Protein	9.15	6.48
Nitrogen-free extract (carbohy- drates)	48.37	54.33
Crude fat	1.95	1.85
Moisture	22.29	11.67
Ash	4.50	6.75
Crude fiber	13.74	18.72
Totals	100.00	100.00

On this showing the lichen has a much higher food value than the best wheat hay. It contains nearly 50% more protein or flesh-forming material, nearly as much carbohydrates and a little more fat. Its protein content is nearly twice that of green alfalfa (4.91%), about three times that of green salt bush (*Atriplex semibaccata*), and over half as much as that of alfalfa hay (17.60%). The digestibility of the lichen has not yet been ascertained; but since it contains less ash and less fiber than wheat or alfalfa hay, its digestibility is probably superior to that of these well-known fodders.

Altogether, the lichen seems to be a valuable food product, amply justifying the use made of it in dry years, and worthy of consideration at all times in localities where it is abundant. On account of its high protein content, it would be good to feed with straw—in fact, this is probably better than feeding it alone. It has been asserted locally to produce abortion in cows near to calving, but authenticated instances seem to be entirely lacking. Moreover, there appears to be nothing in the composition of the plant to warrant the assertion. However, it might be well to use caution in feeding the lichen to such cows, especially those not previously accustomed to it.

Paso Robles, Cal.

J. H. BARBER.

Food Value of a Tall Tarweed.

What the thoughtful and observant rural editor can do for his parishioners, and incidentally for the State at large, is seen by a recent achievement of the *Tulare Register*. It announced the fact some time ago that Louis Bertch, west of Tulare, was cutting, putting up and feeding his stock with the common yellow blossoming alkali weed and that his stock was eating it and doing well on it. People laughed the *Register* and its new hay to scorn. Later the editor found that Charles Pursell had seen stock eat the cured hay with avidity more than twenty-five years ago, but still the laugh went on. Now the contention of the *Register* is reinforced by a scientific analysis by the agricultural department of the State University of a barley sack full of the hay, and the result is most flattering.

PROF. HILGARD'S COMMENTS.—I enclose herewith a report by Prof. Jaffa, giving the analysis and discussing the nutritive value of the tall tarweed, so far as analysis can determine it. While it is possible that the actual digestibility of the nutrients in the plants may be somewhat less than is here assumed, the difference is not likely to be sufficient to diminish materially the importance of the plant in rendering easily available for forage growing the soils that refuse to grow alfalfa.

One of the advantages of the tarweed over the salt bush is its small content of ash, which sometimes renders exclusive feeding with the latter inconvenient, especially in the case of calves. Probably the two together would make a very acceptable ration.

It is now important to find out the cause of the cattle's refusal to eat the fresh plant. My conjecture is that it is an aromatic or resinous substance which they dislike; but it may possibly be the spines. Can you give me any light on this subject? At any rate, would like to examine fresh samples of the weed in its various stages of growth, and, if convenient, would be glad to have sent us by express, from time to time, five or ten pounds of the green stuff well wrapped in damp paper, so that we can get it in good condition.

REPORT BY PROF. JAFFA.—The *Centromadia pungens*, commonly called the yellow blossoming alkali weed, or tall tarweed, grows luxuriantly, attaining a height from 4 to 6 feet on lands of the San Joaquin valley which are not too strongly contaminated with alkali.

The analysis of this plant shows it to be a very valuable fodder, the percentage of all the nutrients being relatively high, notably in the case of the protein or flesh-formers (12.30%), which is nearly double that shown for wheat hay, 50% more than the corresponding figure for oat hay, 9% higher than the per cent of nitrogenous matter found in barley hay, and only exceeded by the protein content of alfalfa hay, as seen by the figures 12.30 and 17.60 respectively.

Experience has shown that stock will not eat *Centromadia* in the green state. This fact may be due to the presence of an essential oil and resin which may probably disappear during the drying or curing of the plant, or to the spiny tips on the leaves. If no odorous substance objectionable to stock is present,

then by siloing the green material the above objections might be overcome, and most certainly would be if the spiny tips were the trouble.

A comparison of the amounts digestible (in 100 pounds) of this fodder with some well known and commonly used hays would emphasize the value of this plant for stock feeding.

The total nutriment, as indicated by the fuel value in one pound, 919 calories, would place this feed stuff the lowest on the list. But when we compare its digestible flesh formers (6.15 pounds) with other hays, we note that it rates almost as high as barley hay, which stands No. 2, alfalfa ranking No. 1 with 12.30 pounds, or about twice that given for either barley, hay or the alkali weed. Hence, we see that the more of the alkali weed that can be used in the ration the more highly nitrogenous will it be, and, consequently, the more beneficial for the animal. If no unpleasant flavors are imparted to the milk by the use of this weed, then the dairyman has a most valuable addition in the *Centromadia pungens* to his list of feed-stuffs.—M. E. JAFFA.

HOW TO HANDLE THE PLANT.—The *Register* adds: This *Centromadia pungens* is a native of this valley, will grow where alfalfa will not, and it ought to be easy to seed our waste lands to it. It is a fodder plant and not a forage. Stock will not eat it green as it grows in the field, but will eat it with avidity when cured and put into hay. Mr. Bertch cures it a little in the sun, but chiefly in the cock, stacking it afterwards, but it will stand to be put up tolerably green.

Against Oleomargarine Again.

TO THE EDITOR:—The dairymen's fight to stop the sale of oleomargarine for butter has now progressed to the point where general and united action by the agricultural press and its farmer constituency, if exercised at once, will result in the passage of the Grout bill (H. R. 3717), which, as you know, has for several weeks been under consideration by the House Committee on Agriculture.

It is very important that every Congressman shall know the wishes of his constituents as to the passage of this bill, and that, too, as quickly as possible, and therefore your assistance is asked to bring this matter before your readers as strongly as you can, asking every one to write to his Representative to work and vote for the Grout bill, and do all he can to secure its early passage.

The National Dairy Union has been granted several hearings by the House committee, and this week makes its final argument on the measure, which is certain to be favorably reported within a few days. It is, therefore, very important that your readers are advised that now is the time to work as never before. The position of the dairymen under present laws is most desperate, and the Grout bill offers the only remedy against the frauds so boldly practised. In the interest and welfare of the dairy business generally we ask that you especially urge your readers to let their representatives in Congress know that they expect them to vote for this most important measure.

CHAS. Y. KNIGHT,

Secretary National Dairy Union.

188 South Water street, Chicago.

This subject is commended to all individuals and associations in the dairy interest, and to all who believe in pure food principles. Every one can do something to show Congress that the producers demand adequate protection for honest products.

THE POULTRY YARD.

Poultry in the San Joaquin.

From an essay by I. K. B. WILLIAMS at the Selma Farmers' Institute.

The poultry of Selma seems to be kept largely in a promiscuous manner, and not in the orderly way which would indicate a love for poultry or success in poultry keeping. I suppose the common excuse for thus letting the hens run and eat when and where they will is that they are too much bother and would not pay for the extra expense and trouble of keeping and feeding them properly, and then only a few are kept anyway.

Only a few! Just the reason for taking care of them. Then you say they are only common hens and it would not be of much use to take care of them anyway. We would not keep them at all, but we like a chicken or a few eggs to eat once in a while.

Do you not keep one or two cows? Do you point to them and say, "Oh, they are only scrub cows, they don't pay for feed, but the children like milk and butter?" Oh, no! You say, "Look at those cows; they are daisies. I wish I had a dozen like them. I have been sending their milk to the creamery all winter and they have paid me from \$7 to \$8 per month each."

Why not be able to say about your poultry, "Look at those hens. Are they not beauties? I have not very many of them, but they have laid enough eggs this winter to buy all of our groceries." If you have

common scrub hens, sell them off and buy a few pure-bred fowls, or buy one or two settings of pure-bred eggs, which is the cheapest way to get started; or if you have some good grade hens, buy a pure-bred male bird to raise from. The Plymouth Rock and Wyandotte can not be excelled for an all-around purpose; they are good winter layers and the young birds bring the best price in the market.

CARE AND FEEDING FOR EGGS.—In order to make hens pay they must have good care and feeding. In the first place, provide them with a good comfortable house in which to roost. The style of house that has given the best satisfaction in California is one that is made perfectly tight on three sides with all cracks battened, so as not to permit any draughts, and the other side opened to the south. To keep out chicken thieves, cover that side with wire netting. Second, keep the house clean and free from mites. Third and most important step is the feed, and there are various methods of feeding for eggs; but all poultrymen agree that, for eggs in winter, hens must have meat of some kind in their daily rations to take the place of bugs and worms that they get in summer.

HATCHING.—How shall we hatch the chickens and raise them—with incubators and brooders or with hens? How hot should the brooders be kept, and what shall we feed the chicks? These are a few of the hard nuts to crack.

In the first place I would say hatch them with incubators and raise them with brooders, as it is less work. You can hatch when you choose and in as large quantities as you choose, without waiting for the hens to get in the notion of setting, and you can raise stronger and healthier chicks, partly because of keeping them away from the old stock and always clean; mites do not appear. Of course, if hens are used to brood the chicks, they can be kept free from vermin, but it is quite a hard matter and more risky than the brooder method. Let the chickens stay in the incubator until they are twenty-four to thirty-six hours old, and do not disturb them by opening the door, as you will let in a cold draft of air which is very harmful.

REARING.—Have the brooder warmed to between 90° and 95° Fahr. and the floor covered with wheat bran, then transfer the little chicks as quickly and warmly as possible into a box or basket or something easily carried and place them in the brooder. They will soon begin to pick at the bran, and this answers for their first meal. For their feed from then until about a month, feed a cake made from the following: Take one-half gallon of cornmeal and one and one-half gallons of whole wheat ground to about as fine as meal, one teaspoonful of soda, one teaspoonful of salt, two tablespoonsful of syrup, two tablespoonsful of vinegar, one-half cup of beef scraps ground up fine, two tablespoonsful of charcoal pounded up fine, one-third teacupful of sea shells pounded up, mix up with sour milk, put a thick cake in a covered pan and bake for two or three hours. After a week old feed a little cracked wheat and corn scattered in litter, feed three times a day just what they will eat up quickly and no more. For the first week give them plenty of boiled milk, but no water, and provide them with a box of sea shells. After the first three days cover the floor with coarse sand.

The temperature of the brooder should be regulated largely by the appearance of the chicks themselves. It should be warm enough so that they will not pile on top of each other trying to get in a warm place and cool enough so they will not scatter all over the floor. For the best results not over fifty chicks should be in one brooder, no matter how large a brooder.

A very important thing in raising chickens is cleanliness. Keep the brooder always clean and never allow it to smell badly. We find every other day is generally often enough for cleaning brooders.

A Salinas Poultry Woman.

"Chickens," said Mrs. A. J. Abbott to a writer for the Salinas Index, "are a profitable investment. The work is not heavy, and there is no reason why every family should not keep chickens." A visit to the home of Mr. and Mrs. A. J. Abbott in the Orchard addition by the Index writer disclosed the fact that Mrs. Abbott is earning enough money to pay the expenses of keeping up a home by raising chickens, and she does her own housework, too. Mrs. Abbott is a slight woman, and not very tall, but she is active, as her home and industry indicate. "I find Brown Leghorns the most profitable. They are ready for broiling at twelve weeks and the hens lay in five months. They are also clean and better layers, therefore I have disposed of all other breeds. Every fall I purchase new thoroughbred roosters and thus continually renew my stock." Mrs. Abbott thus explained, as she led the way to the brooders and runs, why she kept only Brown Leghorns.

THE OUTFIT.—In a building 12x60 feet in dimensions are the brooders and pens occupying one-half of the building lengthwise, while the other half is used for a working room. The 60 feet is divided into two divisions with a sand box between. Each division is subdivided into four pens, each pen having a brooder connected inside of the building. The brooders are

4 feet long, 27 inches wide and 12 inches high, and one furnace heats four. The furnaces are of brick, 2 feet long, 1 foot wide and one foot deep. Inside the furnace is a coil of water pipe which extends underneath the zinc floors of the brooders. When heated, water circulates through these pipes, furnishing heat to keep the little chickens warm. There are two furnaces in the building. Over each pen is a small window in the roof to let in the sunlight. The flooring of the pens is made of wood and is raised 2 feet above the ground, and both the wood and the zinc flooring are covered with half an inch of clean white sand, which is placed in the pens and brooders each day. At present Mrs. Abbott has 365 chicks three weeks old and 360 under a week, all of which are in a healthy condition. These broods are from 420 egg settings. Outside of the building and connected by small doors are eight runs 7x20 feet in size, into which the young chickens are turned for exercise.

FEEDING.—"Proper feeding," exclaimed Mrs. Abbott, "is the secret of success. Chickens should never be overfed. They need lots of exercise to make them healthy, and overfeeding leaves them inactive. The first twenty-four hours after the chicken is out of the shell I feed it nothing. The first week I feed cracked wheat, such as is used on the breakfast table for mush, but just the amount they will eat up clean and no more. Thereafter a soft feed of bran and middlings heated in boiling water is given in the morning. Wheat screenings are also fed. Each day at noon from the beginning I feed green food. The unfertile eggs I boil hard and feed, too."

RATES FOR HATCHING.—Thoroughbred Brown Leghorn eggs bring 50 cents a dozen in single dozen lots and 25 cents in ten-dozen lots. Mrs. Abbott also hatches chickens in her incubator for customers and makes quite a bit of money that way. When she furnishes the eggs she delivers the young chicks for \$1 a dozen, and when the eggs are furnished she receives 75 cents a dozen for hatching.

Nine pens 16x20 feet enclose 150 hens. In each pen is a hen house with nests and roosts. Once a week these pens and houses are cleaned. The straw in the nests is burned and the boxes smoked.

Under the foregoing conditions, Mrs. Abbott raises healthy chickens, and has succeeded in earning considerable money. "Every farmer," said Mrs. Abbott, "should have at least 200 chickens. They would pay all household expenses for a medium-sized family."

Four grown and seven young Belgian hares are a new departure for Mrs. Abbott, yet she believes they will be more profitable than chickens. Mr. Abbott is erecting a warren for the accommodation of Lord Roberts, the buck, and his retinue of does and young. Among the many fowls at the Abbott home are four Indian game hens from the Country Club preserves in Marin county.

Conference Corner.

TO THE EDITOR:—What causes the wattles of hens to swell and also their throats? It appears to go from one hen to another, but does no damage except that it makes them stupid. READER.
Capay.

THE IRRIGATOR.

The Census Inquiry.

The prompt and careful responses to the recent request by the director of the census, for information relating to canals and ditches, indicate that the importance and value of a complete and accurate census of irrigation are appreciated by those engaged in this branch of agriculture.

Director Merriam is very well pleased with the great interest evinced in the work of collecting data, and is confident that with the continued assistance of the irrigators and the press, the present investigation will be a success.

The returns from the preliminary inquiries furnish evidence of the material progress made arid America and give promise of an advance in the twentieth century, exceeding the wonderful development of the Mississippi valley during the past decade. The boundary line, which so long has divided the arid and humid regions, will no longer stay the onward march of agriculture. To-day it is realized that just beyond that line lies an empire greater and far more resourceful than any yet conquered. With the narrowing of the unoccupied limits of Government lands in the humid zones the question of reclaiming the arid and subhumid regions grows in importance, and is to-day claiming the attention of the wisest minds of the nation.

Many of the preliminary schedules sent out in December and January have been received and are already tabulated. She mailing of the principal schedules is being pushed as rapidly as possible.

The questions in this schedule are numerous and important. Director Merriam requests that they be carefully answered, as upon these answers an accurate and perfect census of irrigation largely depends.

The scope of the present inquiry is broad. Its purpose is to determine the present conditions and re-

sults of irrigation, and to tabulate the same in such a manner that they may be fully comprehended by every one. Such a work, successfully conducted, will result in bringing about a more complete realization of the fact that the development of irrigation is affecting the prosperity of our nation as well as the progress and stability of many Western States.

FORESTRY.

The Grazing Proposition.

Secretary Wilson of the Department of Agriculture has received a communication from Secretary Hitchcock of the Department of the Interior, asking his aid in solving the problem of grazing in the Western forest reserves. The division of forestry will commence immediately an investigation which will last several months.

The controversy over the alleged evil effects of sheep grazing has involved Western cattle men, wool growers and farmers in a bitter war for many years, and the recent increase of irrigation has added to the bitterness. Government action in the matter has been hastened by the establishment of forest reserves. In view of the injury to the forests in many sections from overgrazing, all reserves except those in Washington and Oregon, and the Black Mesa reserve in Arizona, which is to be opened to 300,000 sheep at 3 cents a head, are closed to sheep by an order issued last May. This step has raised a storm of protest from wool growers, who insist that no harm is done by grazing under proper restrictions. Many are reported to have driven their herds into the mountains last summer in defiance of the law.

Against the sheep owners are arrayed the cattle men and farmers, and especially the irrigators, who claim the practise means disaster to agriculture in the lowlands. These argue that sheep destroy the forest cover in the mountains and thus diminish the water supply. They are said not only to eat the young growth which is to perpetuate the forest, but to tramp down innumerable seedlings and destroy the layer of leaves necessary to keep the soil in good condition. Sheep herders are accused of burning large areas in order to secure a growth of grass. While the Government will decide the matter only in the case of the forest reserves, these include a large part of all the summer ranges of the Western sheep raising States, and the results will be of great importance to the American wool growing industry.

As no general rule can be applied, each reserve will be studied separately. The first step of the division of forestry will be to collect impartially the testimony of both sides. Lists of questions will be sent to thousands of sheep men and their opponents. About July 1 an examination of the reserves will begin. A number of botanists, irrigation experts and similar scientific men will be secured from all parts of the United States, and they will spend several months in the field. In addition, all field parties of the division of forestry engaged in other work in the interested regions will be required to give time to the sheep question also. Secretary Hitchcock has asked the Department of Agriculture to give special attention to the following phases:

- Relation of grazing to taxation and the general prosperity of specified localities.
- Relation of grazing to forest fires.
- Relation of grazing to the preservation and reproduction of forest.
- Relation of grazing to irrigation and water supply.
- Effects of grazing by different kinds of stock.
- Moderate grazing and overgrazing.

Forestry Schools.

Some interesting facts regarding the attitude of the various colleges toward the comparatively new profession of forestry in the United States are shown by the applications for the position of student assistant in the division of forestry. This grade, which was created last summer, is an innovation in departmental methods. A number of young men, who have decided to make forestry their vocation, are employed during the summer at \$25 a month and their expenses. They work under experts and receive practical instruction, while the Government secures intelligent assistance at little cost.

Last summer there were but thirty-five applications for this position. This year, although three months remain before field work will begin, over 160 have already applied. Forty of these are Yale men, mostly undergraduates; Cornell and the University of Minnesota have each eleven, Harvard twenty-three, and the Biltmore Forest School three. The remainder of the applicants represent several different schools and some are not college men. Timbered parts of the United States, singularly, do not furnish as many forest students as the more thickly settled districts. There are but three applicants from west of the Mississippi. On the other hand, the interest at Yale is so great that a school of forestry probably will be established there this fall.

Agricultural Review.

BUTTE.

ALMONDS DROPPING.—Gridley Herald: Complaints are coming in from the almond orchards of the dropping of young fruit. No cause is ascribed, but many are of the opinion that it is due to the feeble state of the trees induced by the two years of very dry weather. This seems to be borne out by the fact that the trees which had the benefit of irrigation last year are holding their fruit.

BANNER YEAR PROMISED.—Chico Enterprise, March 21: A. Lowe, who has inspected nearly every orchard in this vicinity, informs us that never have the fruit growers of this section had such a prospect for a large crop as at present. In fact, he says that, barring a possible frost, the crop will be simply enormous, not only in prunes and peaches, but in all varieties of fruit. The prospect for hay and grain is also most encouraging; and, though the continued rains have to some extent interfered with plowing and seeding on the adobe lands, taken all in all the crop will no doubt be very large. Reports from all around indicate that this will be Butte's banner year.

FRESNO.

RAISIN ASSOCIATION WILL BUILD AN OFFICE.—Fresno Republican, March 22: At a meeting of the raisin growers yesterday afternoon two things were decided on—one that the directors should build a handsome new home for the association, and the other that the time of securing the required percentage of signatures to the new contracts should be extended to April 2nd, the date of the annual meeting. The meeting was a large one, the hall being inadequate to accommodate the growers.

FAVOR HAVING FIVE DIRECTORS.—At a meeting of the directors of the California Raisin Growers' Association an amendment to the by-laws was proposed, reducing the number of directors from seven to five and making three constitute a quorum instead of four. At yesterday's meeting four members were present, and the proposed amendment was adopted unanimously. It will be submitted to the meeting of growers to be held on the 2nd proximo. In reference to the proposed amendment, Mr. Kearney stated: "The reason for the change is that, owing to ill health, John McMullin desires to withdraw from the Board. Mr. Chittenden, being a resident of Hanford and a Supervisor of that county, his time is very much taken up, and he desires to be removed from the duties of his office."

KERN.

SHIPMENT OF SHEEP.—Bakersfield Echo, March 22: A big shipment of sheep came in from Flagstaff yesterday on the Santa Fe road. There were thirty carloads and the freight on them was \$3200.

WILL SPRINKLE ROADS WITH OIL.—Supervisor Jastro has been promised the oil necessary to sprinkle certain roads in his district, and to properly handle it has a special tank made. It will hold 2000 gallons and is set on the truck of the road sprinkler formerly used. A steam heater is placed on the back end of the wagon and pipes are connected with a coil which runs through the tank, so it will work on the same principle as a waterback in a stove. In addition to this the motion of the wagon will keep the oil stirred so that every part of it will come in contact with the steam pipes. This will thin the oil so that it will run freely through the sprinklers.

MENDOCINO.

FRUIT COMPANY INCORPORATED.—Hopland News, March 16: The Hopland Fruit Company has been incorporated, capital stock \$3000. The object of this corporation is to erect a fruit drier and packing house, and to have them ready to handle fruit by July 1st. The officers of the corporation are: J. R. Banks president; S. E. Brooks secretary, H. Huntington treasurer; board of directors,

J. R. Banks, E. Dooly, Sam Duncan, O. R. Meyers and H. H. Huntington.

ORANGE.

SPLENDID WELL.—Anaheim Gazette, March 22: Mr. Neff informs us that his well continues to yield its unvarying stream of water. The well is 100 feet deep and the surface water has fallen to 37 feet—6½ feet lower than at this time last year. The well pit is 28 feet by 5½ feet across. He hauled brick with the intention of lowering the pit 7 or 8 feet, but found on resuming pumping operations that this work is not at all necessary. The flow of water, which is probably the largest pumped from any well in the county, continues at 160 inches, and persistent pumping does not seem to lessen the supply or lower the water.

SAN BERNARDINO.

SHEEP SHEARING.—Chino Champion, March 23: The spring sheep shearing will commence in a few days. There are on the ranch between 15,000 and 18,000 sheep, and it is expected that the wool clip will aggregate 350 bales of 400 pounds each, or 140,000 pounds. At the present price—13 cents—sheep men will have a revenue of about \$18,200 from their spring wool clip, to say nothing of the increase of their flocks.

PLANTING BEET SEED.—It is an animated scene where the sugar company is grading and irrigating land and planting beets. About fifty teams are engaged in this work. The fields are first graded and leveled, so that all parts may be reached with the water. It is then furrowed and the water turned on from the main ditches, which reach out to all these tracts. After the ground is thoroughly soaked, it is allowed to stand two or three days until it gets solid enough to put a team on, when it is cultivated and planted. Up to date there have been about 400 acres irrigated and about 375 acres planted on the Chino ranch. The acreage outside reaches about 1000. The beets planted here are making a splendid start and are growing nicely, giving promise of a good crop. One feature of the irrigation now is that the refuse lime from the factory settling reservoir is being mixed with the water, and in that way carried out and distributed over the land. Experts state that lime will be of great value to this soil, and will give the young beets a vigorous, thrifty growth at the start and carry them through the ills to which young beets are sometimes subject, especially when they start weakly or under adverse conditions.

SAN JOAQUIN.

FAVORABLE CROP PROSPECTS.—Lodi, March 23: Not for ten years has northern San Joaquin had such glorious prospects for crops in every quarter. Grains are doing famously, trees are loaded with tiny fruit and vines give evidence of wonderful things to come. Rains have been most timely and the winter has been most mild and open, and if frosts hold off for a few weeks little or no damage can result. Fruit men are seriously considering the problem of labor for the coming season.

DAIRIES COMBINE FORCES.—Stockton Mail, March 20: The owners of the Oakland Ranch, Oak Home, Pioneer and Hildreth dairies, with Cy Moreing, have united and formed the San Joaquin Milk & Creamery Company. A cold storage room and pasturing plant will be provided for sterilizing milk and cream. The distribution of milk from these dairies will be under one management, so that, instead of covering the same territory, as is now done, the city will be districted, and one wagon can serve twice as many customers as is possible under the present system.

MAKING OLIVE OIL.—Lodi Sentinel, March 25: Five miles south of town is the Moore olive orchard, now owned by Campodonico & Letera. These gentlemen purchased the orchard four months ago for \$100 per acre. There are eighty-one acres in the ranch, sixty-five being in olives with bearing trees, the other 16 unimproved, but since put into vines by the purchasers. The firm has put about \$3000 into the plant already and has by no means completed it. It is expected to largely improve the plant before next season. No positive figures of the results could be given at this time, as the firm has not marketed any oil yet. There are about twenty varieties of oil on the place, but the largest number of trees belong to the Ruba variety, which is a very fine olive for making oil. That this orchard already has a reputation is attested to by the fact that Mr. George Roeding, a nurseryman from Fresno, recently purchased 1900 cuttings.

SANTA BARBARA.

BELGIAN HARE ASSOCIATION.—Santa Barbara Press, March 22: The Santa Barbara branch of the National Belgian Hare Club has been organized. The fol-

lowing officers were elected: President, Prof. Dana; vice-president, O. P. Squiers; secretary, Mrs. J. A. Guttery; treasurer, E. S. George; directors, Mr. F. L. Wilson, C. S. Bond, E. S. Cayce, Prof. Guttery.

SANTA CLARA.

ADVISES IRRIGATION.—Pacific Tree and Vine, March 17: Rain has not fallen, as we had some reason to expect. We believe it prudent to proceed with irrigation where possible, and where not to get the ground in a most thorough state of cultivation. Speaking with Henry Booksie Jr., a very thorough irrigator, he said that the natural rainfall to date had wet the ground to the depth of about 4 feet; that he had been irrigating his own orchard, and, while not at all positive as to the exact amount of water used per acre, he said that it had caused the moisture to descend to a depth of from 7 to 8 feet, and that he considered this a very fair condition, as the best of the feeding roots are all within this depth.

RIGID DAIRY INSPECTION.—San Jose, March 24: City Veterinary Inspector Spencer, acting under orders from the board of health, has begun an active crusade against owners of dairy cows that are infected with tuberculosis. He has issued a notice to dairymen and all others selling milk that their cattle must be inspected with the tuberculin test, according to the ordinance, before April 1. This also applies to families who have but one cow and sell an occasional quart of milk. In order to obtain a milk license it will be necessary to present a certificate showing the cows are not diseased, signed by a veterinary surgeon. Dairies outside the city have also been notified that unless herds are tested their products of milk, cheese and butter will not be allowed to enter the city after April 1. There has been a general desire to comply with the order by most milkmen.

SANTA CRUZ.

FIRST STRAWBERRY SHIPMENTS.—The Watsonville Register credits Bow Ching Chong with making the first shipment of strawberries for this season from Pajaro valley. R. W. Eaton has been shipping small lots from Vega for the past month, and was the "season opener" this year.

BEST APPLE SALE IN ENGLAND.—Watsonville Pajaronian, March 22: The best sale of Pajaro Valley Newtowns made in England this winter was made early this month in London, when a shipment of four-tier stock, packed under the direction of W. R. Keller for Austin Kimball of New York, sold for 12 shillings and 3 pence per box—about \$2.95 per box. The best sale of 5-tier stock was made at the same time—packed by Grizich & Ralovich of

this city. They brought 7 shillings and 6 pence—about \$1.80 per box.

APPLES FOR THE PARIS EXPOSITION.—Two hundred and fifty barrels of Pajaro valley apples—about 800 boxes—have been collected by the United States Department of Agriculture at Eastern cold storage points and shipped to Paris as a portion of the apple exhibit of the United States. Each apple was carefully selected for color, size and soundness and was wrapped in wax paper. Those apples will do valuable missionary work for California and Pajaro valley. They speak for themselves. Much praise is due the Department of Agriculture for its service to California in hunting up and procuring these apples.

SOLANO.

ALMONDS DROPPING.—Dixon Tribune, March 23: Late reports are to the effect that almonds are dropping badly at Tre-mont. No cause is known for this unless it is the long, continued damp weather and sunless days, thus preventing a proper fertilization and distribution of the pollen. However, the old-fashioned Drake Seedling promises a heavy yield, and good returns may be expected from it.

CHERRIES ARE EARLY.—Vacaville Reporter, March 24: An examination of the cherry orchards indicates that the crop will be a large and early one. The early varieties in particular seem to promise a big crop. Early Purple Guignes promise well, and it is probable that we shall this season surpass the records of last year, when a shipment of cherries was made to the East on March 31st. This is a hard record to beat, we understand, having never been surpassed and only once equalled, that event occurring in 1885. It must be said of the cherry crop that it does not cut the figure in Vacaville that it did years ago. It has not been a reliable crop. Moreover, the cherry orchards have felt very seriously the effect of drought during the dry years. It caused the death of a good many trees.

Eureka Harness Oil is the best preservative of new leather and the best renovator of old leather. It oils, softens, blackens and protects. Use

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on your best harness, your old harness, and your carriage top, and they will not only look better but wear longer. Sold everywhere in cans—all sizes from half pints to five gallons. Made by STANDARD OIL CO.

ACME



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PULVERIZING HARROW

CLOD CRUSHER AND LEVELER.

Meets the most exacting requirements of all soils for all crops under all conditions. Crushes, cuts, lifts, pulverizes, turns and levels. Made of Cast Steel and Wrought Iron—lasts always. Light draft; cheapest. Riding Harrow made. Best Pulverizer on earth. Sizes 3 to 13½ ft.

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to be returned at my expense if not entirely satisfied. I deliver free on board at New York, Chicago, Columbus, Louisville, San Francisco, Kansas City, Minneapolis, &c. Catalogue and booklet, "An Ideal Harrow," mailed free. Address, DUANE H. NASH, Sole Mfr., Millington, N. J., or Chicago, Ill.

MENTION THIS PAPER.

COMPETITORS HAVE FRANKLY ADMITTED THAT

The Improved U. S. Separators

ARE THE BEST SKIMMERS ON THE MARKET.

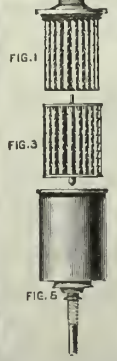


FIG. 1
FIG. 3
FIG. 5

We illustrate herewith our new corrugated bowl, which is giving such perfect satisfaction, and which does not require hot water to flush. A small quantity of skim milk does the work thoroughly—more so than competitors that have central tubes and a multiplicity of discs for the cream to stick to, as the U. S. has neither. Competitors, in their efforts to find something to check the

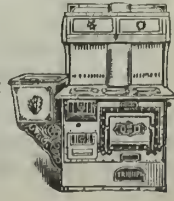
Victorious Progress of the United States,

have tried to make a big bugbear of using hot water to flush the bowl, but now this, their last criticism, is overcome, and they are at loss to know what to harp on to prejudice purchasers against the Improved U. S. and reduce the constantly increasing sales. Write for our 1900 or "New Century" catalogue giving full particulars.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.

\$50.00 RANGE FOR \$25.00
TO INTRODUCE OUR

TRIUMPH STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21½ inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. Wm. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.



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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular.

THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

Dickens in Camp.

Above the pines the moon was slowly drifting,
The river sang below;
The dim Sierras, far beyond, uplifting
Their minarets of snow.

The roaring camp fire, with rude humor,
Painted
The ruddy tints of health
On haggard face and form that drooped
and fainted
In the fierce race for wealth;

'Til one arose, and from his pack's scant
treasure
A hoarded volume drew,
And cards were dropped from hands of
little leisure
To hear the tale anew.

And then, while round them shadows
gathered faster,
And as the firelight fell,
He read aloud the book wherein the
Master
Had writ of "Little Nell."

Perhaps 'twas boyish fancy,—for the
reader
Was youngest of them all,—
But, as he read, from clustering pine and
cedar
A silence seemed to fall.

The pine trees gathering closer in the
shadows,
Listened in every spray,
While the whole camp with "Nell" on
English meadows,
Wandered and lost their way.

And so in mountain solitudes, o'ertaken
As by some spell divine—
Their care dropped from them like the
needles shaken
From out the sturdy pine.

Lost is that camp and wasted all its fire,
And he who wrought the spell?
Ah, towering pine and stately Kentish
spire,
Ye have one tale to tell!

Lost is that camp. But let its fragrant
story
Blend with the heart that thrills
With hop-vines' incense all the pensive
glory
That fills the Kentish hills.

And on that grave where English oak and
holly
And laurel wreath entwined,
Deem it not all a too presumptuous folly,—
This spray of Western pine!

—Bret Harte.

The Town Reprobate.

The day Lucius McKnight came back to town, after a term in the penitentiary, a number of citizens made it a point to be at the station. They wanted to see how he would "brave it out."

He swung off the platform almost before the train stopped, and lifted his hat frankly but unsmilingly to everybody he knew.

"No covert glances there," commented one.

"No," said another, "nor any dragging of the left foot. Doesn't seem to have any of the signs that you read about by which a convict may be detected."

"Those weren't the government clothes he had on, either," added the first man. "He must have made the raise of another suit."

Meantime, the man of whom they were talking was walking briskly up the main street of his village, speaking gravely to all whom he knew. He passed the bank where he had once been a trusted officer, and where he had betrayed the trust reposed in him, and he had looked up at its ungracious facade with casual interest.

"He's got nerve all right enough," agreed his townspeople, unable to decide whether to condemn or to admire this hardihood of demeanor. "If I had been he, you would never have caught me back in this town again."

McKnight went to a cheap hotel far up the street, and asked for a room. Some of the meaner spirits rejoiced at this, remembering how in the old days there had never been anything quite good enough for him at Red Willow. But after he had secured his room he came out again and walked toward the

country, passing the pretentious house and grounds which had once been his, and which he had sold for the benefit of his unwilling creditors in the days of his disgrace. He looked at the place with interest, appeared to notice with satisfaction some changes which had been made in it, and then he walked on.

There were plenty to mark where he went. Those who watched saw him pass the chalk quarries, and strike the old umbrageous road that led to the cemetery. He was going to his mother's grave. It was a fresh grave, but there were no flowers on it. He went to a neighbor's and borrowed a hoe, and made the ground around about the mound ready for the reception of plants, and then he went back to town. At supper time he appeared at the table with the rest.

Some who had known him in the old days tried shyly to make overtures.

"Glad to welcome you back, McKnight," said they. "If we can be of any service, call on us."

The thanks were made with a stange quietness which disconcerted those who received them. They felt that in some way which they could not understand the soul of this man dwelt apart. It had known peculiar and perhaps terrible experiences. It was brooding in some solemn place of its own, and for the time being it was unapproachable.

Mary Lester, the school teacher, had a theory about it. "It is not so easy to liberate the soul as it is the body," she said. "I suppose his soul has not yet got out of its prison."

"There doesn't seem to be anything hang-dog about the man," observed the one who was talking to her.

"Why should there be?" she inquired, with some spirit. "He made what restitution he could for his crime before he went to the penitentiary at all. He has been punished as he deserved. I suppose he reasons that that helps to wipe out the score. After a child in my school has been punished according to his deserts I restore him to his rights and privileges. A moral coward would never have come back to this town again. But Lucius McKnight has come back here where the worst is known of him. I think he has excellent courage. I wish he would call on me. I'd make him welcome."

But he called on no one. He joined no one on the street. This evidence of sensitiveness and suffering was the only one he gave.

The second morning after his return to Red Willow Lucius McKnight rented a little, old, one-story structure on Main street, which had been left over from the early days, and proceeded to scrub it out, and to paper and paint it with his own hands.

The people who had thought of him only as a luxurious and dishonest pop-injay, a driver of fast horses, and a giver of big dinners, looked aghast. There appeared to be no self-consciousness about the man. There was nothing approaching bravado in his manner of working. He gravely did what he pleased, asking odds of none.

There was still more occasion for surprise when he hung a sign artistically lettered by himself before his door: "Cane-Bottomed Chairs Reseated Here."

"My soul!" gasped the citizens, "that's nerve for you."

"What else could he do?" said Mary Lester, in almost tearful defense. "Which one of you would have offered him a job? He had no profession save banking, and that is closed to him forever. He had no trade except the one he has recently learned. I think the man has more sense than anybody I ever knew."

And the next morning she sent a man down to McKnight's shop with three chairs to be recaned. She mailed a little check in payment, and around the check was folded a slip of paper, on which was written in the distinct hand which the school children knew well:

I hold it truth, with him who sings,
To one clear harp in divers tones,
That men may rise on stepping stones
Of their dead selves to higher things.

The mayor's wife was the next to

offer work to this strange artisan. That set the fashion. The men laughed, but the women kept him caning chairs.

One day it was observed that he had fixed a lathe at the back of his shop, and that he was experimenting with it. A little later a completed chair stood in his window. It was not an ordinary chair. That love of beauty which had formerly betrayed its possessor into extravagance and crime demonstrated itself now in an exquisite piece of handicraft. In its proportions, its materials, its manufacture, and its finishing it stood an honest and beautiful example of workmanship.

Miss Phoebe Dillingham, who had teakwood, and rosewood, and Japanese inlaying in her new house, and who knew a work of art when she saw it, came to purchase.

"This particular chair is intended as a gift," said the town reprobate pleasantly, "but I shall be happy to make another one for you, Miss Dillingham, either from a plan of my own or after any design you may care to submit."

"You remember those illustrations of antique furniture I have had so long, Mr. McKnight. Don't you think we might find something good there? Won't you call this evening and look them over with me?"

McKnight called quite as a matter of course, and was as self-possessed as if and untoward event had not broken off those visits for several long years. But it was decided that the chair was to be made from an original design after all.

As for the first work of McKnight's lathe, that was seen by the whole village in the dainty sitting room of Miss Mary Lester.

People got into the way of asking McKnight out, and to their surprise he accepted. He wore his cheap and unconventional garments with as much grace as he had his elegant attire in the old days. His conversation, as of old, was as broad and general in its character. And, to cap the climax, after he had accepted the hospitality of a number of persons, he bade them all to his shop, where they sat on the chairs the ex-convict had carved, and ate on a freshly scrubbed deal table.

When all his guests were seated comfortably before his fire Lucius McKnight spread his hands to the blaze and said in a conversational, every-day tone:

"When I was serving my term in prison I worked next to a man named —" and then he told a tale whose alternating humor and pathos held the listeners in thrall. He went on with other stories—grim stories, in which the souls of the men who had been found out were laid bare; and the talker discovered to his listeners many a thing of which they had been ignorant, not the

least of which was that just punishment brought a peace to the soul which immunity never could give to one who had been an offender against himself and the law. He seemed to give the key to the town reprobate's placidity. The guests learned a great deal that night, and they were vastly entertained as well.

"I think he was endeavoring to explain himself," confided Mary Lester to Phoebe Dillingham.

"It was more absorbing to me than

Weak Lungs

When your throat and lungs are perfectly healthy you needn't worry about the germs of consumption. They don't attack healthy people. It's the weak, debilitated, inflamed membranes that are first affected. Hard coughs and colds weaken your throat and lungs and make consumption more easy.

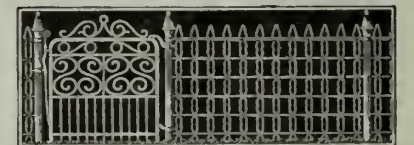
If your lungs are weak

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is the best remedy you can take. It soothes and heals and gives tone and strength to these delicate membranes. In this way you can prevent consumption. And you can cure it also if you haven't had it too long. Keep taking it until your lungs are strong and your weight restored.

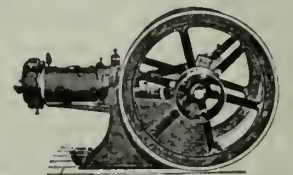
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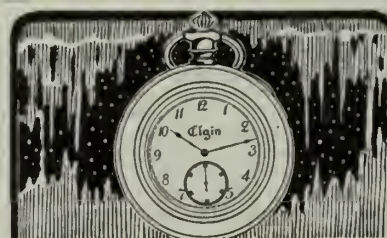
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in refrigerating rooms and ovens, are used in testing

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ELGIN NATIONAL WATCH CO., Elgin, Ill.



THE COUNTRY IS FULL

of Farmers who say, "Page Fences are all right."
PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

any play I ever saw," said Miss Dillingham. "The man has a most striking personality. He has always been the most remarkable person in this community."

It was Miss Dillingham who made a proposition to the ex-convict.

"I have some money I want to invest," said she. "And I'd like to invest it in some manner that would bring an interest into my life. What do you say to setting up a factory for hand-made artistic chairs from original designs, the firm to be Dillingham & McKnight?"

"I think I should be doing an injustice to you," said McKnight; and it was the first word of self-depreciation that any one had heard him speak.

"You are mistaken," said Miss Dillingham firmly. "You will only assist me in adding to my reputation for eccentricity. Besides, it will give you money which you need for—restitution and rehabilitation."

"Never mind about the rehabilitation," said he. "But if you can make the restitution possible I shall be at your service, no matter what you ask, till the day of my death."

When, five years later, that restitution was completed, the firm of Dillingham & McKnight was celebrated and prosperous. It had a reputation owing to its romantic history no less than to the distinctive and beautiful character of its wares.

"Now what shall I do?" asked the village reprobate humorously the day he returned from the payment of his last cent of conscience money.

"You might marry the woman you love," said Miss Dillingham, sharply.

"I am always at your service," he replied. "I shall never marry and serve you."

"Nonsense! Don't I know you love Mary Lester? Don't I know she loves you?"

"I will put no interests in my life save yours."

"Don't be a fool, Lucius. We'll all be getting old soon, and we've had sorrow enough. Marry Mary, and let me be godmother to your first-born. You must marry. I've got to have something new to talk about."

So, since he was hers to command, he did as she bade him. On his wedding day Miss Dillingham uttered a pronouncement.

"It takes brains to live down crime," said she. "A stupid man thinks he is everlastingly condemned. He can't get rid of the superstitions. Now, I don't believe anybody is lost who has a chance to retrieve the past."

"It is impossible to retrieve some pasts," objected one who listened.

"It is never impossible to save the soul alive," insisted Miss Dillingham. "But it takes brains to make the courage and the hope."

"Brains won't save a woman who has sinned," urged the other.

"Oh, yes, they will!" cried Miss Dillingham with enthusiastic dogmatism. "There is a chance even for the sinful woman who has sense enough to see that she can redeem herself. I know! I've seen it done. Courage, courage! That will save any one at last."

"I think Miss Dillingham needs a little courage herself just now," thought the listener, but she did not attempt to explain why.

Miss Dillingham drove to the station with the wedding couple and waved them off.

"She has the courage all right enough," thought the observer with admiration, for she guessed, and rightly, that Phoebe Dillingham had deliberately set aside her heart's joy.

Fruit For Brain Power.

According to a recent health report, blanched almonds give the brain the muscle food, and the man who wishes to keep his mental power up would do well to include them in his daily bill of fare. Juicy fruits develop more or less the higher nerve or brain, and are eaten by all men whose living depends on their clearheadedness. Apples supply the brain with rest. Prunes afford proof against nervousness. At the same time it has been proved that fruits do not

have the same effect on everybody. Some people have never been able to eat apples without suffering the agony of indigestion; to others strawberries are like poison.

A Characteristic Anecdote of Roosevelt.

Major Llewellyn, who was with the New Mexico battalion of Roosevelt's Rough Riders, tells the following incident, illustrating how Colonel Roosevelt "bluffed" his way through his introduction to the men who served under him. It was related to a Washington writer of syndicate letters:

"The colonel arrived one day, and hadn't been in camp an hour when he sent out an order for a council of officers," said Major Llewellyn. "We all hurried up to headquarters, not having any idea what was meant. Roosevelt addressed us sharply. He said, 'I am going to have regimental drill in the morning at 9 o'clock. Here are the movements you will be prepared to execute, and I want them done not only accurately but with a snap.' I'll never forget how the colonel got out that word 'snap.' He said no more, but dismissed us with all the manner of the strictest disciplinarian. I went off with the cold chills running up and down my back, for I was conscious of how rusty I was in all the tactics. We carried off the list of movements the colonel had given us and studied them until taps. At 9 o'clock the regiment was out, and until 12 o'clock we pounded away under the hot sun at the programme Colonel Roosevelt had given us. The most exacting West Pointer ever turned out couldn't have put us through a more severe trial than Roosevelt did. When we got to the end of that regimental drill we were covered with dust and sweat and used up worse than if we had been riding the range all day. A little later I had washed, and was passing the headquarters, when Colonel Roosevelt saw me and beckoned me to come in. He was lying on a cot and laughing to himself gleefully. He said to me: 'We got through that regimental drill pretty well, but do you know, captain, that those movements were every blessed thing I knew of the tactics? I studied them out on the cars coming from Washington. If Wood had ordered any other movements I would have been in a bad fix.' After that," said Major Llewellyn, "I knew that the thing to do in the 'Rough Riders' was to put up a bold front and go ahead, and we did."

Drinking Hot Water.

A prominent medical journal says that there are four classes of persons who should not drink hot water freely. They are: (1) People who have irritability of the heart. Hot water will cause palpitation of the heart in such cases. (2) Persons with dilated stomachs. (3) Persons afflicted with "sour stomach." (4) Persons who have soreness of the stomach, or pain induced by light pressure. These rules are not for those who take hot water simply to relieve thirst better than cold water, and for that purpose is not to be condemned. But hot water is an excitant, and in cases in which irritation of the stomach exists should be avoided.

EVERY continent on the globe, with the exception of Australia, produces wild roses. There can be little doubt that the rose is one of the earth's oldest flowers. In Egypt it is depicted on a number of very early monuments, believed to date from 3000 to 3500 B. C. Rosewater, or the essence of roses, is mentioned by Homer in the "Iliad," and the allusion made to the flower in the proverbs of Solomon indicates that it had already been known.

WELL? Suppose life to be a desert? There are halting places, and shades, and refreshing waters; let us profit by them for to-day.—Thackeray.

No LIFE can be pure in its purpose and strong in its strife, and all life not be purer and stronger thereby.—Owen Meredith.

Domestic Hints.

CABBAGE SALAD.—Chop one head of cabbage fine. Put it in a dish and sprinkle with salt and pepper. Beat one egg thoroughly and add it to one cup of boiling vinegar. Rub two tablespoonfuls of mustard to a paste in a little cold vinegar and add to the boiling vinegar, together with a small piece of butter and one teaspoonful each of pepper and sugar. Pour it over the cabbage while hot.

ORANGE PUDDING.—Peel and slice three oranges, lay them in a pudding dish and sprinkle with sugar; make a custard of one-half pint of milk, the yolks of two eggs, one-fourth cup of sugar and one teaspoonful of cornstarch. When cold pour over the oranges. Whisk the whites of the eggs into a stiff froth, add one-third cup of pulverized sugar, cover the top of the custard and put it in the oven until it turns a delicate brown, which will be in a few minutes.

HOT CARAMEL SAUCE.—Melt two ounces of unsweetened chocolate over hot water; add two cupfuls of light brown sugar, an inch length of cinnamon bark, half a cupful of new milk, and a piece of butter the size of a walnut; cook until it forms a soft ball when dropped in cold water; remove the cinnamon, add vanilla to flavor, and pour a spoonful or more, hot, over each serving of ice cream. The sauce will candy over the cold cream, forming a caramel coating which is very delicious.

Hints to Housekeepers.

Before cooking sweetbreads soak them for an hour in mild lemon juice and water.

Save the paper bags. They make good gloves for Bridget to clean the stove with.

An appetizing relish for dinner meats is made from a cabbage heart cut into dice and pickled like little onions.

Spring lamb is in season from January 1 to July 1. The flesh is immature and is, therefore, less nutritious than mutton.

Cold steak may be acceptably served as a leftover by passing it through the meat chopper and arranging it neatly on a platter, garnished with parsley or watercress.

Broth from mutton is very wholesome and suitable diet for an invalid, and may be given to typhoid fever patients if carefully prepared. A leg of mutton or saddle of average weight should cook from one hour and a quarter to one hour and a half, basting every fifteen minutes. Mutton must hang to ripen, but the flesh of lamb must be eaten soon after it is slaughtered and dressed.

Now that the season of colds and coughs is on, the advice of a medical journal is useful. This is that constant coughing is precisely like scratching a wound; so long as it is continued the wound will not heal. Let a person when attempting to cough take a long breath until it warms and soothes every air cell. The benefit will soon be felt and the control of the cough be much easier the second time.

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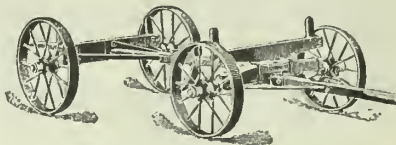
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CAPACITY.....Guaranteed 5000 lbs.

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Made by The Shunk Plow Co., Bucyrus, O.

DON'T STAMMER!

TESTIMONIAL.

Santa Clara, Cal., Feb. 8, 1900.
On March 31, 1899, I sent my son, who was then a very bad stammerer, to Prof. J. Whitehorn for instruction. The professor was most successful in correcting his speech, and to-day he speaks and reads naturally and fluently and without any stammering whatever. The professor's name will never be forgotten.
GEORGE ROTH.

PROF. J. WHITEHORN, A. M., Ph.D.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, March 28, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	66½ @ 66½	— @ —
Thursday.....	66 @ 65½	— @ —
Friday.....	65½ @ 65½	— @ —
Saturday.....	66 @ 65½	— @ —
Monday.....	66½ @ 65½	— @ —
Tuesday.....	65½ @ 66	— @ —

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May	July
Wednesday.....	5s 9¼d	5s 8¼d
Thursday.....	5s 9¼d	5s 8¼d
Friday.....	5s 8¼d	5s 8 d
Saturday.....	5s 9¼d	5s 8¼d
Monday.....	5s 9¼d	5s 8¼d
Tuesday.....	5s 9¼d	5s 8¼d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	97½ @ 97½	1 04 @ 1 03½
Friday.....	97½ @ 97½	1 03½ @ 1 04
Saturday.....	— @ —	1 04½ @ 1 04½
Monday.....	98¼ @ 97½	1 04½ @ 1 03½
Tuesday.....	97½ @ 98	1 04 @ 1 05
Wednesday.....	98¼ @ 98½	1 05¼ @ 1 06

WHEAT.

While foreign and Eastern markets were moderately firm during the greater part of the week under review, the local situation, so far as prices obtainable for spot wheat were concerned, was no better than preceding week. The scarcity of ships and the high ocean freight rates prevailing make prospects poor for the development of any special strength in the near future in the wheat market of this coast. The bay has been practically bare of disengaged tonnage for many weeks, and this is likely to be the case for some time to come. The strength manifested in the Chicago market was mainly in sympathy with corn, and the foreign markets most of the time simply reflected the conditions on the Atlantic side of America. Spot market closed firm at quotations, but very quiet.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 97½@98½c.	
December, 1900, delivery, 1.03½@1.06.	
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at 98½@98½c; December, 1900, 1.03½.	
California Milling.....	\$ 97½@1 02½
Cal. No. 1 shipping, alongside.....	96¼@ 98½
Oregon Valley.....	95 @1 00
Walla Walla Blue Stem.....	95 @1 02½
Walla Walla Club.....	85 @1 00
Off qualities wheat.....	82½@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	-s-d @ -s-d	-s-d @ -s-d
Freight rates.....	@ 32½s	40 @ 41½s
Local market.....	\$1 08½ @ 1 11¼	96¼c @ 1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

There is very little superfine or low grade flour upon the market, but an abundance of what are termed extras or stock ordinarily used by bakers and families. Prices are quotably unchanged, with the market firm for superfine at the low rates current on the same, but weak for other grades.

Superfine, lower grades.....	\$2 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

Not much doing in this cereal at present, but firmness is a little more apparent, although in the matter of quotable rates there are no special changes to record. Inquiry on local account is lighter than usual, owing to many dealers using Port Costa screenings at present, these being obtainable at seemingly lower figures, or, in other words, the buyer gets more bulk and less quality for his money. A cargo of barley was sent afloat for Great Britain this week, the ship Godiva taking 3500 tons, valued at \$60,105, being 85c per cental. This barley was only fair quality, gauged from a brewing standpoint. At close dry weather influences caused market to tend against buyers.

Feed, No. 1 to choice.....	72½ @ 75
Feed, fair to good.....	67½ @ 72½
Brewing, No. 1 to choice.....	85 @ 95
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

Supplies and offerings are of fairly liberal proportions but are mostly of rather ordinary quality. Market for common qualities is weak and slow at the figures quoted, most dealers being tolerably well stocked for the time being with this description. Fancy or high-grade oats continue in quite limited supply and buyers in quest of the same find it necessary to pay comparatively stiff figures.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 15 @ 1 22½
White, poor to fair.....	1 07½ @ 1 12½
Gray, common to choice.....	1 10 @ 1 20
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 31
Black Russian.....	90 @ 1 02½
Red.....	95 @ 1 20

CORN.

Market is steady at the quotations, with spot supplies of both Eastern and domestic product of very slim volume. That there will be any noteworthy weakness developed in the near future is not probable. Some of the domestic offering is too damp to be eagerly sought after or to command extreme quotations.

Large White, good to choice.....	1 07½ @ 1 12½
Large Yellow.....	1 07½ @ 1 12½
Small Yellow.....	1 50 @ 1 60
Eastern Mixed.....	1 07½ @ 1 10

RYE.

Trading is light, there being no active inquiry nor any special selling pressure. Quotations remain as last noted.

Good to choice, new.....	97½ @ 1 00
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BUCKWHEAT.

None coming forward from any quarter and spot supplies are very small. Market is naturally against buyers, but values are largely nominal.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

While market is not showing any great activity, there is enough doing to cause a strong tone to prevail, as there are no heavy supplies, either here or in the interior. It is estimated that the shipment of two carloads per day, which would be a very light average export movement, would exhaust the entire surplus long before the end of the season. Any change in values in the near future are almost certain to be to stiffer values than are now current.

Pea, fair to good, 100 lbs.....	3 35 @ 3 50
Small White, good to choice.....	3 25 @ 3 40
Lady Washington.....	3 15 @ 3 25
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 65 @ 2 85
Bayos, good to choice.....	3 15 @ 3 35
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 25 @ —
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

DRIED PEAS.

Values remain quotably as before, but are little more than nominal, as there are no offerings from first hands and only light stocks held by dealers.

Green Peas, California.....	2 00 @ 2 15
Niles Peas.....	2 00 @ 2 15

WOOL.

Not much business has been yet done in new wool, but dealers are commencing to look around and prospects are favorable for an active market at an early day, or as soon as accumulations are of sufficient magnitude to admit of making up desirable lots. The wool thus far received shows in the main fine condition. The few transfers of now clip effected have been within range of the figures below named.

Humboldt and Mendocino.....	20 @ 23
Northern, free.....	16 @ 18
Northern, defective.....	13 @ 16
Middle Counties, free.....	15 @ 17
Middle Counties, defective.....	13 @ 15
Southern Mountain, 12 mos.....	12 @ 14
Southern Mountain, free, 7 mos.....	12 @ 15
Southern Mountain, defective, 7 mos.....	10 @ 12
Nevada, as to condition.....	16 @ 18

HOPS.

Inactivity is as pronounced as it has been at any time for several months past, with prospects of the market remaining in much the same groove as at present until the opening of next season. Hops remaining unplaced are mostly under choice, and dealers have all of this sort that they care to carry.

Good to choice, 1899 crop.....	6 @ 9
--------------------------------	-------

HAY AND STRAW.

It does not seem possible for the hay market to be in much worse condition than at present. Hay of last season con-

tinues to be offered freely and at the exceedingly low figures current continues to move very slowly. Even the most select Wheat hay fails to command what can be correctly termed a fair price. Now hay is now being cut in some sections and may be expected on the market at an early day.

Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 50 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 5 @ 7 00
Stock.....	4 50 @ 5 50
Compressed.....	6 50 @ 9 50
Straw, per bale.....	30 @ 40

MILLSTUFFS.

Bran was in only moderate receipt and prices ruled fairly steady, although not much was required to satisfy the demand. Middlings and Shorts were without quotable change, both being in light stock. Rolled Barley and Milled Corn went at practically the same figures as preceding week.

Bran, per ton.....	11 50 @ 12 50
Middlings.....	15 00 @ 17 00
Shorts, Oregon.....	13 00 @ 15 00
Barley, Rolled.....	16 50 @ 17 00
Cornmeal.....	23 50 @ 24 00
Cracked Corn.....	24 50 @ 25 00

SEEDS.

Little doing in seeds of any description, and of most kinds the offerings are too light to admit of any noteworthy operations. Some Flaxseed has been arriving from the North, most of the same having been previously placed.

	Per cwt.
Mustard, Trieste.....	3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25

	Per lb.
Canary.....	3¼ @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4½
Timothy.....	4 @ 4½
Alfalfa, Utah.....	9 @ 10

BAGS AND BAGGING.

There is a little contracting in Grain Bags for forward delivery at much the same values as have been quoted for some weeks past, but the market in the main is very quiet. Wool Sacks are moving into the interior on account of the Spring clip in tolerably large quantity, and market is moderately firm at current rates, quotations being for unbroken bales.

Calcutta Grain Bags, buyer June-July.....	6¼ @ —
Calcutta Grain Bags, spot.....	6¼ @ —
San Francisco Grain Bags, 22x36, spot.....	6¼ @ —
State Prison Bags, per 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 3¼
Wool Sacks, 3½ lbs.....	— @ 2½
Fleece Twine.....	7¼ @ —
Gunnies.....	— @ 12½
Bean Bags.....	4½ @ 5¼
Fruit Sacks, cotton.....	6¼ @ 7¼

HIDES, PELTS AND TALLOW.

The Hide market continues to tend downward for Wet Salted, and values for Dry are not being too well maintained. Pelts are ruling fairly steady, with receipts not especially heavy at this date. Tallow is still selling to fair advantage, demand being equal to the supply.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10	9
Medium Steers, 48 to 56 lbs.....	9	8
Light Steers, under 48 lbs.....	9	8
Heavy Cow Hides, over 50 lbs.....	9	8
Light Cow Hides, under 50 lbs.....	9	8
Wet Salted Kip.....	9	8
Wet Salted Veal.....	9	8
Wet Salted Calf.....	10	9
Dry Hides.....	18	14
Dry Kip and Veal, 11 to 16 lbs.....	17	13
Dry Calf, under 4 lbs.....	18	15
Salted Horse Hides, large.....	2 50 @	—
Salted Horse Hides, medium.....	2 00 @	—
Salted Horse Hides, small.....	1 00 @	—
Dry Horse Hides, large.....	2 00 @	—
Dry Horse Hides, small.....	75 @	1 00
Dry Colts' Hides.....	50 @	75
Pelts, long wool, per skin.....	1 00 @	1 25
Pelts, medium, per skin.....	70 @	90
Pelts, short wool, per skin.....	35 @	60
Pelts, sheaaling, per skin.....	25 @	35
Deer Skins, best summer.....	27½ @	30
Deer Skins, good medium.....	21 @	22½
Deer Skins, thin winter.....	— @	10
Elk Hides.....	10 @	12
Tallow, good quality.....	5 @	5¼
Tallow, No. 2.....	4½ @	4¾
Goat Skins, perfect.....	30 @	37½
Goat Skins, damaged.....	10 @	20
Kid Skins.....	5 @	10

HONEY.

Beyond the filling of small orders by jobbers, there is virtually nothing doing in this line at present, and there is not likely to be any change of consequence in the situation until new crop begins to come forward. Advices from producing points indicate that the crop in this State this season will be light in the aggregate.

Extracted, White Liquid.....	7¼ @ 8
Extracted, Light Amber.....	7 @ 7¼
Extracted, Amber.....	5 @ 5¼

White Comb, 1½ frames.....	11¼ @ 12¼
Amber Comb.....	8 @ 10

BEESWAX.

Quotable rates remain as before, with offerings of small compass, and a demand at current rates for all the desirable stock obtainable.

Good to choice, light, per lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Beef ruled quiet at previously quoted values. Mutton was not in heavy receipt, but sufficient supply for immediate needs. Veal and Lamb sold at about last quoted rates, with supplies and demand both only moderate. Hogs arrived in sufficient quantity to keep the market in much the same condition as preceding week, although current figures were well maintained for packing stock.

Beef, first quality, dressed, net per lb.....	6¼ @ 7
Beef, second quality.....	6¼ @ —
Beef, third quality.....	6 @ —
Mutton—cows, 7 @ —; wethers.....	7¼ @ —
Hogs, hard grain fed, medium.....	5¼ @ —
Hogs, small, fat.....	5¼ @ —
Hogs, large, hard.....	5¾ @ 5½
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ —
Hogs, country dressed.....	5½ @ 6
Veal, small, per lb.....	7 @ 9
Veal, large, per lb.....	7 @ 8
Lamb, spring, per lb.....	10 @ —

POULTRY.

The poultry market was as a whole less favorable to sellers than for several weeks preceding, not so much due to increase of offerings as to lighter demand, although receipts of Young Chickens showed material increase, especially Broilers. Ducks were scarce. Fat Geese were in light receipt and in good request.

Turkeys, dressed, per lb.....	— @ —
Turkeys, live hens, per lb.....	12 @ 13
Turkeys, live gobblers, per lb.....	11 @ 12
Hens, California, per dozen.....	3 50 @ 4 50
Roosters, old.....	3 50 @ 4 00
Roosters, young (full-grown).....	6 00 @ 6 50
Fryers.....	5 00 @ 5 50
Broilers, large.....	4 00 @ 4 50
Broilers, small.....	2 50 @ 3 50
Ducks, per dozen.....	4 50 @ 5 50
Geese, per pair.....	2 00 @ 2 25
Goslings, per pair.....	2 25 @ 2 75
Pigeons, old, per dozen.....	1 75 @ 2 00
Pigeons, young.....	2 00 @ 2 25

BUTTER.

There has been further softening in values for fresh butter, prices showing a quotable decline within the week of about 2c per lb. The weakness continued to be most pronounced on creamery and separator butter, supplies being largely of these descriptions, while much of the demand, especially for shipping and packing orders, was for good rather than fancy qualities.

Creamery, extras, per lb.....	19 @ —
Creamery, firsts.....	18 @ —
Creamery, seconds.....	17½ @ —
Dairy, select, per dozen.....	16½ @ 17½
Dairy, seconds.....	15½ @ 16½
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 15
Creamery in tubs.....	19 @ 20
Pekled Roll.....	— @ —
Flrkin, California, choice to select.....	19 @ 20
Flrkin, common to fair.....	17 @ 18

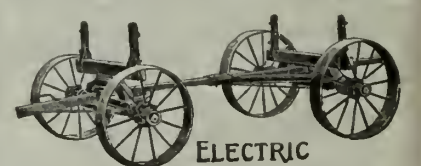
CHEESE.

Stocks of local product continue liberal, most of it being too new and soft to stand much handling, otherwise there would be more demand and better prices. The range of values is unusually narrow, most sales of flats being at 8c naked.

California, fancy flat, new.....	8¼ @ —
California, good to choice.....	8 @ 8¼
California, fair to good.....	7½ @ 8
California Cheddar.....	— @ —
California, "Young Americas".....	8¼ @ 9¼

BUY THE BEST.

If you want the best low down wagon you should buy the Electric Handy Wagon. It is the best because it is made of the best material: the best broad tired Electric Wheels; best seasoned white hickory axles; all other wood parts of the best seasoned white oak. The front and rear



ELECTRIC

hounds are made from the best angle steel, which is neater, stronger and in every way better than wood. Well painted in red and varnished. Extra length of reach and extra long standards supplied without additional cost when requested. This wagon is guaranteed to carry 4000 lbs. anywhere. Write the Electric Wheel Co., Box 10, Quincy, Illinois, for their new catalogue, which fully describes this wagon, their famous Electric Wheels and Electric Feed Cookers.

Steel Wheels for FARM WAGONS
Any size wanted, any width of tire. Hubs to fit any axle. For catalogue and prices write Empire Manufacturing Co., Quincy, Ill.

EGGS.

While prices have sagged since last review, the drop in values has been very moderate as compared with the breaks experienced in prices for some weeks preceding. Considerable quantities are going into cold storage at current rates, and it is not likely that there will be any further appreciable decline.

California, select, large, white and fresh. 14 @—
California, select, irregular color & size. 13 @13½
California, good to choice store. 12½@13
Eastern, as to section and grading. — @—
Eastern, cold storage. — @—

VEGETABLES.

Some spring vegetables were in decreased receipt and higher, notably Peas, String Beans and Tomatoes. Asparagus was in free receipt; canners are now running on this vegetable. Onions are bringing fully as stiff figures as previously noted, and choice are very difficult to obtain in anything like wholesale quantity.

Asparagus, ½ box. 75 @1 75
Beans, String, ½ lb. 5 @ 8
Cabbage, choice garden, ½ 100. 40 @—
Cauliflower, ½ dozen. 50 @—
Cucumbers, bothouse, ½ doz. 50 @1 50
Egg Plant, ½ lb. 8 @ 10
Garlic, ½ lb. 2½@ 3½
Onions, Yellow, Cal., good to choice. — @—
Onions, Oregon, ½ cental. 2 50 @3 00
Peas, Sweet, garden, ½ lb. 2½@ 3
Peas, Green, ½ sack. 1 25 @1 75
Peppers, Green Chile, ½ lb. — @—
Peppers, Bell, ½ lb. — @—
Rhubarb, ½ box. 75 @1 25
Squash, Summer, ½ box. 1 00 @1 25
Tomatoes, Southern, ½ box. 1 75 @2 25
Tomatoes, Bay, ½ box. — @—

POTATOES.

The market is well stocked with common grades of old, but when it comes to choice or fancy qualities, buyers find trouble in satisfying their wants. While the market is weak for ordinary offerings, high grade stock commands comparatively good figures, and in a small way an advance on quotable rates. New potatoes are beginning to arrive in wholesale fashion and prices are on the decline.

Burbanks, River, ½ cental. 40 @ 90
Burbanks, Bay counties, ½ cental. 60 @ 95
Burbanks, Humboldt. 70 @1 00
Burbanks, Oregon. 50 @1 05
River Reds. — @—
Bu. banks, Salinas, ½ cental. — @—
Early Rose. 75 @ 90
Garnet Chile. 60 @ 80
Peerless. — @—
New Potatoes, ½ lb. 1¼@ 1½
Sweet, River, ½ cental. — @—
Sweet, Merced. — @—

The Fruit Market.

FRESH FRUITS.

Most of the Apples now offering are out of cold storage, and it is the exception where these will keep long in good condition after being exposed. There is a scarcity of high grade Red or any fine table Apples, and such are hardly quotable. Market for common qualities is not particularly firm. Strawberries were in moderate receipt. Longworths went mainly at 65c@81 per drawer, and Molindos or large berries, fair to good, at 25c@40c per drawer.

Apples, fancy, 4-tier box. 1 75 @2 25
Apples, good to choice, ½ 50-lb box. 1 25 @1 75
Apples, common to fair, ½ 50-lb box. 50 @1 00

DRIED FRUITS.

The market for cured and evaporated fruits has developed few changes since date of last report. The general features continue much the same as a week ago. Orders are not numerous and are in the main for only small and assorted lots, these being filled as a rule by jobbers out of their own stocks. Dealers are anxious to reduce rather than increase their holdings, which is generally the case at this time of year. While there is some movement in Prunes, mostly in the larger sizes, it is at generally easier rates for latter description than have been lately current. Asking figures on large Prunes have been shaded quarter to half a cent to effect sales. For 40-50's in sacks 4c. is now the quotable extreme f. o. b. at any common shipping point. For small Prunes 2½c. is bid, and when large are offered with small, the former are occasionally taken to secure the latter. Undipped Prunes are given the decided preference in this market, jobbers engaged in packing preferring to do their own dipping. Prunes which stand for several months after having been dipped are apt to become sugary, necessitating their being redipped, which does not improve the quality, and on this account the undipped stock is preferred. Peaches other than fancy are quotably lower, the decline in values according to recent transfers of good average qualities being about half a cent per lb. The Apple market is weak at the quotations, in sympathy with the condition on the Atlantic side, where prices are lower than are current here. Figs are still in fairly liberal supply in second hands, and appreciable concessions would be readily granted

buyers if any noteworthy transfers could be effected by so doing. Apricots, Pears and Plums are in only moderate stock, but even of these sorts there is enough for the immediate demand at existing rates.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, ½ lb. 10½@12
Apricots, Royal, fancy. 12½@13
Apricots, Moorpark. 13 @15
Apples, in 50-lb boxes, rings, pressed, fancy. 7 @—
Apples, 50-lb boxes, rings, pressed, good to choice. 5½@ 6½
Figs, White, fancy pressed. 5½@ 6
Peaches, unpeeled, good to choice. 5 @ 6
Peaches, unpeeled, fancy. 7 @ 7½
Peaches, peeled, in boxes. 12½@15
Pears, unpeeled Bartlett's, halved, fancy. 9 @10
Pears, halved, unpeeled Bartlett's. 6½@ 8
Pears, quartered, unpeeled Bartlett's. 6½@ 7½
Plums, Black, pitted. 6½@ 7½
Plums, White and Red. 7 @ 8
Prunes, in sacks 40-50s. 3¼@ 4
50-60s. 3¼@ 3½
60-70s. 3¼@ 3½
70-80s. 3 @ 3¼
Prunes in boxes, ½c higher for 25-lb boxes, ¼c higher for 50-lb boxes.
4 sizes Santa Claras and equal. 3 @—
4 sizes San Joaquin and Northern. 2½@ 2¾
Prunes, Silver. 4 @ 7

COMMON SUN-DRIED.

Apples, sliced. 4 @ 5
Apples, quartered. 4 @ 5
Figs, Black. — @ 3
Figs, White. 3 @ 3½
Peaches, unpeeled. 5 @ 6

RAISINS.

So far as wholesale trading is concerned, there is virtually a total absence of business in this line. Quotations are unchanged, but owing to the inactive condition of the market, values are not clearly defined. Stocks are not heavy, but the summer is almost invariably a dull period for Raisins, and that many will be required to satisfy the demand during the balance of the season is not probable.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, ½ box. 1 60 @—
do do 2-crown, ½ box. 1 50 @—
Valencia Layers, ½ 20-lb box. 80 @1 00
(Usual advance for fractions.)

Loose Muscatel, 3-crown. 6¼@—
Loose Muscatel, seedless. 5 @—
Pacifies.—2-crown loose Muscatel, 5¼c; 3-crown, 6c; 4-crown, 6½c; seedless, 4¾c.
Orientals.—2-crown loose Muscatel, 4¾c; 3-crown, 5¼c; 4-crown, 6c.

(Above prices for loose raisins are for 50-lb. boxes.)
Thompson Seedless.—Bleached fancy, ½ lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, ½ lb., 8½c; choice, 7½c; standard, 6½c; prime, 5c. Unbleached, 5c.
Loose Valencias.—Fancy, ½ lb., 5½c; choice, 4½c; standard, 3½c.

Valencia Clusters.—Fancy, ½ lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Oranges are selling at a wide range, common qualities being in liberal stock and going at generally low figures, while choice to select Navels of medium sizes are not plentiful and are commanding comparatively good figures. Sales of Navels may be said to range from 75c up to \$2.75 per box, owing to the size and condition of the fruit, as also to the quantity changing hands. Lemons were held at practically the same figures as last quoted, but trading in them was not active, and market lacked firmness, especially for other than fancy qualities. Values for Limes ruled decidedly steady, with immediate supplies of light proportions.

Oranges—Navels, fancy ½ box. 2 25@2 75
Navels, common to fair. 75@1 25
Navels, good to choice. 1 50@2 00
California Seedlings. 65@1 25
Lemons—California, select, ½ box. 2 25@2 50
California, good to choice. 1 50@2 00
California, common to fair. 1 00@1 25
Limes—Mexican, ½ box. 5 50@6 00
California, small box. 50@1 25

NUTS.

Market presents no noteworthy changes in general condition or in quotable rates. Almonds are still obtainable in much larger quantity than custom can be found for at this date at anything near prevailing quotations. Peanut market shows firmness, there being no large offerings of any sort.

California Almonds, shelled. 14 @17

California Almonds, paper shell, ½ lb. 10 @11
California Almonds, soft shell. 7 @ 8
California Almonds, hard shell. 4 @ 5
Walnuts, White, soft shell. 9 @10
Walnuts, White, California, standard. 7 @ 8
Chestnuts, California Italian. 8 @10
Peanuts, California, fair to prime. 5 @ 6
Peanuts, Eastern, hand-picked. 6 @ 6½
Pine Nuts. 5 @ 6

WINE.

The market is in generally unsatisfactory condition for producers, there being considerable pressure to realize and dealers are taking advantage of this fact. To sell at present necessitates the acceptance of low prices. Many are unwilling to let go at figures now obtainable, although the future is by no means well defined. Should there be damaging frosts, the market would be apt to develop firmness, but with continued good prospects for coming crop the demand for last year's vintage may continue slow. Present purchases of dry wines of 1899 are mainly at 16c per gallon for choice Northern, San Francisco delivery. Sales of Santa Clara wine are reported as low as 14½c, San Francisco delivery, but the wine going at this figure is by no means first-class. Small lots of new sweet wines, pressed to sale, are reported to have changed hands at 30c per gallon, delivered in this city.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks. 165,486	1,617,663	3,931,882
Wheat, cents. 26,115	5,006,751	2,416,092
Barley, cents. 26,236	4,471,247	1,191,235
Oats, cents. 9,745	652,813	570,403
Corn, cents. 1,555	100,735	129,345
Rye, cents. 122	91,752	21,415
Beans, sacks. 2,299	330,624	349,653
Potatoes, sacks. 20,875	997,069	934,998
Onions, sacks. 1,076	137,421	146,115
Hay, tons. 2,981	135,115	106,167
Wool, bales. 537	37,226	35,064
Hops, bales. —	9,268	11,471

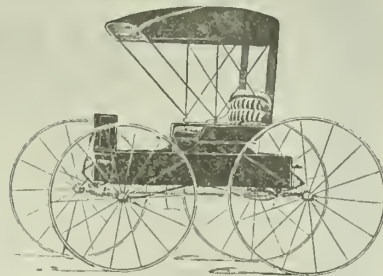
EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks. 105,876	3,161,528	2,514,294
Wheat, cents. 273	4,413,684	1,558,509
Barley, cents. 12,905	3,571,837	330,171
Oats, cents. 2,825	37,238	18,978
Corn, cents. 241	15,849	16,726
Beans, sacks. 257	21,785	78,014
Hay, tons. 4,634	107,523	54,899
Wool, pounds. 191,774	4,324,453	1,655,334
Hops, pounds. 13,879	966,512	1,291,311
Honey, cases. 25	3,308	4,787
Potatoes, packages. 1,159	61,580	39,819

California Dried Fruit at New York.

NEW YORK, March 28.—Evaporated apples, common, 4½@5½c; prime wire tray, 6@6¼c; choice, 7@7½c; fancy, 7½@8¼c.
California dried fruits quiet, but values fairly steady.
Prunes, 3½@6c.
Apricots, Royal, 13@15c; Moorpark, 15@18c
Peaches, unpeeled, 7½@9c; peeled, 18@22c.

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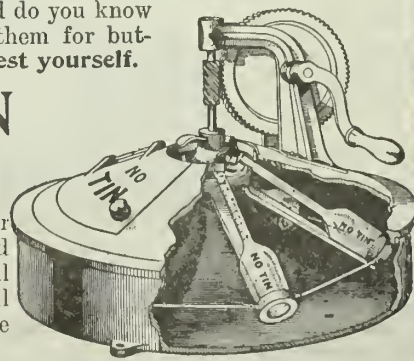
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Manufactured by HAVANA METAL WHEEL CO., Havana, Ill.

THE VETERINARIAN.

Answers by Dr. Creely.

COW IN A BAD STATE.

TO THE EDITOR:—What can I do for a Jersey cow that is "run down"—has looked very thin, hair rough for some months, appetite fair to good by spells? Milked her seven months after the first calf, but dried her up, hoping she would gain. She will soon calve. During the last month she has rubbed off patches of hair on her neck until she looks like a dog with the mange.—F. B. MARKS, Dos Palos.

Try the tuberculin test. For the skin trouble, use the prescription given in a previous issue for the same trouble.

TREATMENT FOR THRUSH.

TO THE EDITOR:—I have a mare that had the thrush in her front foot. I used bluestone on it and thought it was well. It got sore some time after and white matter oozed out of it. The frog was white next to the heel and very tender. I put on a cow dung poultice, which took the soreness out, and then used carbolic acid wash, but it did not seem to improve. I am using bluestone now. Have I treated it right? If not, what shall I do? The frog seems to be coming out. It is peeling up at the toe and leaves the new frog very soft and white at the heel. It has parted in the center so that I can run a syringe in an inch or more, and there is a deep crease on either side which runs from the center of the frog to the hair. What is it, what caused it, and what can I do for it? Is turpentine good for a hoof? Will it hurt to work her if she is not lame?—READER, Campbell.

Bluestone is too strong and irritating for ordinary use, although greatly valued by the ancients. The following is proper treatment for thrush: First thoroughly cleanse with carbolic solution; insert cotton into the cleft or diseased part; remove the cotton and replace it as many times as it comes out soiled. After the part is thoroughly cleansed with the cotton put in the following powder and plug it up with cotton: Calomel, 2 ounces; oxide zinc, 1 ounce; iodoform, 1 ounce; powdered charcoal, 1 ounce. The most important of all is to shoe with tips and let her stand in a dry stall and keep the manure away from the stall.

HORSE WITH COUGH.

TO THE EDITOR:—I have two horses that cough a great deal. One coughs more as a horse would that had the heaves, but it is not the heaves. There is at times a slight discharge from the nose, something of the nature of a distemper discharge. They do not seem to get worse, but remain about the same. They may, perhaps, cough a little less when thoroughly warmed up. They do not seem to lose flesh. Can you tell me what to do for it?—SUBSCRIBER, Vallejo.

All food must be wet, and give the following: Extract licorice root, 1 ounce; chlorate potash, 4 ounces; powdered camphor, 1 ounce; codeine, 1 drachm; citrate iron, 2 ounces; solid extract belladonna, 1 ounce; water, 1 quart. Give 1 to 2 ounces two times daily.

COW WITH JAW SWELLINGS.

TO THE EDITOR:—Can you tell me what is the probable trouble with a cow that has swellings about her jaws? She feeds well and is in good condition now, but a while since she looked badly on good pasture. Is her milk fit for use? Can anything be done for her? Please answer through the PACIFIC RURAL PRESS.—S. EWER, St. Helena.

If the enlargement adheres closely to the jaw, use internally 2 drachms daily iodine potash and apply tincture of iodine externally. If it is loose, lance it and wash out daily with a carbolic solution. Apply externally iodoform and zinc salve. Use the milk.

DR. E. J. CREELY.

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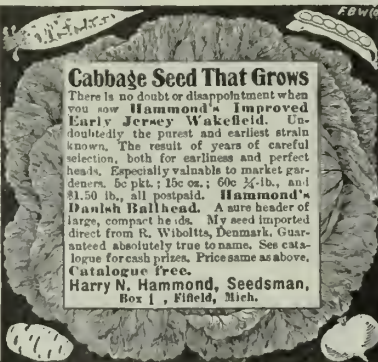
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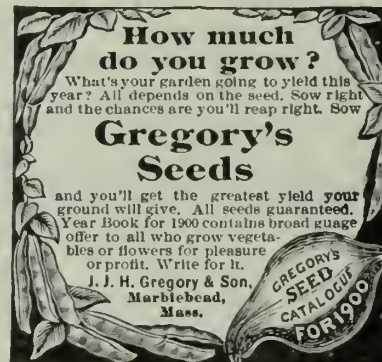
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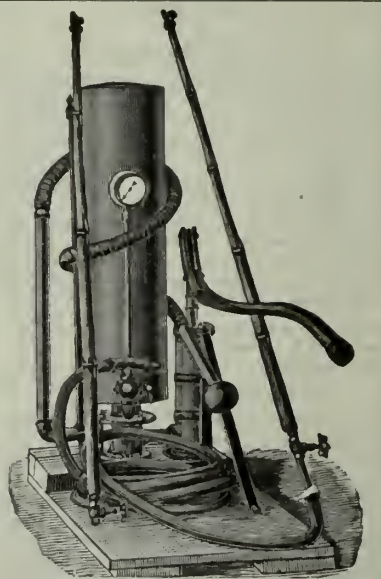
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derful success. I do not use any other. I have successfully
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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR WEEK ENDING MARCH 13, 1900.

- 645,074.—WRENCH—C. C. English, Hood River, Ogn.
645,168.—GAS BURNER—J. P. Farmer, Portland, Ogn.
645,356.—LEAD PENCIL—A. D. Foster, Oakland, Cal.
645,470.—WATER TOWER—H. H. Gorter, S. F.
645,228.—GRAIN CLEANER—J. M. Lasswell, San Miguel, Cal.
645,533.—CONCENTRATOR—J. Mauldin, Sacramento, Cal.
645,531.—EVAPORATOR—A. P. Merrill, S. F.
645,229.—TRAVELING TARGET—H. L. Moller, S. F.
645,213.—SASH LOCK—H. U. Prindle, Woodland, Cal.
645,536.—ENGINE FOR ROCK DRILLS—P. H. Reardon, S. F.
645,537.—HOSE COUPLING—P. H. Reardon, S. F.
645,300.—OFFICE INDICATOR—C. V. B. Reeder, San Jose, Cal.
645,188.—SEPARATOR—F. A. Rider, Vekal, Ariz.
645,132.—ROTARY ENGINE—M. J. Robinson, Los Angeles, Cal.
645,219.—BORING DRILL—C. S. Stafford, S. F.
645,221.—WATER WHEEL—S. J. Tutthill, S. F.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

REFRIGERATOR CAR.—John Zobrist, Hanford, Cal., assignor to the John Zobrist Refrigerator & Ventilator Co. of same place. No. 644,268. Dated Feb. 27, 1900. The object of this invention is to provide cars for the transportation of perishable fruits and like goods, and means for keeping them continually cooled. The car has vertically disposed ice chambers at opposite ends, hermetically closing doors in the roof through which ice may be lowered into the chambers. These chambers have open work walls surrounding the ice chamber, and an annular air passage exterior thereto. A second open or network wall outside of the air chamber serves to retain the body of salt which is packed into the space exterior to the network wall, and between it and an outer closed casing. A lining extends across the top of the car and from end to end, forming a passage between it and the roof, with a central opening communicating with the interior of the car, and openings at the ends communicating with the air passages surrounding the ice chamber. A passage is formed along the center of the floor of the car around and over which the boxes are packed and openings are made between the opposite ends of this passage and the lower ends of the refrigerator air chambers. Revolvable fans are so disposed that the air will be caused to circulate through the refrigerating chambers and thence through the bottom passage, and through the car by means of the passages formed by the piling of the boxes or packages of merchandise within the car.

SNATCH BLOCK.—Walter W. Bouse, Aberdeen, Wash. No. 644,729. Dated March 6, 1900. This invention relates to

improvements in snatch blocks, and it consists in the novel construction of a shell formed of cast steel or forged plates, one side being made in two parts with a hinge portion. The hinge pin is located below the line of curvature of the pulley rim where it crosses the open space, and converging so as to form an essentially continuous curve at the lower part of the shell. The upper part is slotted and through the slot passes a latch, with means for connecting it with the opposite side when the block has been closed. The lower shell is rigid, with a hollow pin of large diameter upon which the sheave turns, and this pin is provided with a means for containing and gradually discharging the lubricant within the sheave. It is also so fitted as to lock the two sides of the shell together.

METALLIC LIFEBOATS.—Wm. S. Ray, San Francisco, Cal. No. 644,723. Dated March 6, 1900. This invention relates to improvements in the construction of life and similar boats. In the usual construction of metallic boats they are formed of a number of sheets of metal overlapped and riveted together to complete the sides, and these sheets are then secured to wooden keels and have wooden runners fixed to the top. In addition to this a number of ribs or braces are necessary to give the boat thus constructed the requisite stiffness. These parts fitting closely against the metal gather moisture, which tends to rust and eventually destroy it, besides preventing access for the purpose of painting, etc. In this invention the boat has the sides each formed of a continuous single sheet of shaped metal, and a keel and stem and stern post formed of a single piece of metal, to which the boat sides are secured, gunwales being formed of segmental strips secured upon the upper edges. Interior to the boat are air tanks following the interior curvature of the sides, and these serve as supports for the thwarts and transverse containing compartments which are formed underneath the thwarts. Air chambers are also formed in the ends of the boat, and the intermediate parts are all supported out of contact with the inner sides, and are all removably secured in place.

SELF-LEVELING GRAIN CLEANER.—J. M. Lasswell, of San Miguel, Cal. No. 645,228. Dated March 13, 1900. The object of this invention is to provide a means by which the cleaning apparatus of traveling harvesters may be kept level transversely, and at the proper inclination longitudinally without reference to the tilting of the machine as it passes over the ground. It consists of shafts extending transversely across the screens about midway between the ends, so that the screen is fulcrumed thereon to tilt longitudinally. A crank arm is journaled in the sides of the machine and connected with one end of the screens, and weights depending from the ends of the shaft act like a pendulum to swing the shaft and correspondingly tilt the screens so that they are kept level in that direction. A second weight is suspended, and is so connected with the screens as to be vertically slidable, in side bars so that the screens will also be leveled by the transverse swaying weight whenever the machine tilts to one side or the other.

TRAVELING TARGET.—H. L. Moller, San Francisco, Cal. No. 645,229. Dated March 13, 1900. This invention comprises an endless track or runway with changes of direction, gears adapted to travel upon the track and means by which they are propelled, and a means for engaging and disengaging the gears with the propelling devices; a target of any description carried upon the car, a protecting wall by which the gears themselves are concealed, while the target projects above the wall so as to be in view of the marksman at the shooting stand. The target is so supported that when it is struck it will fall, and guides are so arranged with relation to it that it will afterwards be restored by them to its normal position. Brushes are also located in the path of the target by which the previous marks upon it will be obliterated.

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Improved High-Frame Baby No. 2,	450 lbs.,	125.00
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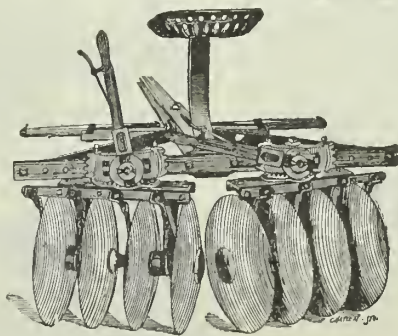
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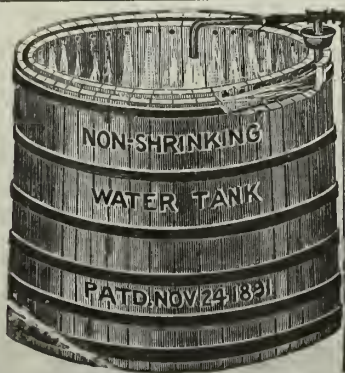
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Patrons of Husbandry.

From the Worthy Master.

To THE EDITOR:—I have been told that there are farmers in this State planting vines who know nothing of the phylloxera or resistant roots. One man pulled up a burr clover, saw the little tubercles on the roots and remarked that "the weed had seeds on both ends."

This ignorance is not confined to those who never were inside college walls. I heard an ex-president of a college tell about some college boys (?) who, when wishing to water the horse one hot day, unbuckled the crupper so the horse could get his head down. They knew they had seen something let down, but they couldn't tell just what.

Locke, the great philosopher, said he attributed what little he knew to not having been ashamed to ask for information and to the practise of conversing with all classes of men on those subjects chiefly which formed their own professions and pursuits.

There are too many who will not attend the Farmers' Institute. They say those professors know a good deal about something and can talk well, but when you get them off their own subject they don't know so much more than we farmers do. Don't you know that we ought to compare notes and one learn from the other? Women get together and swap receipts when they can not attend cooking schools. I know Mrs. Rorer, Mrs. Ewing and others, who have studied the chemistry of cooking, make very palatable and digestible combinations. Sometimes I see intelligent people eat cucumbers, pork, doughnuts and drink several cups of strong coffee at the same meal. Too much of one kind. I often think we go it blind too much in this world. We stuff our horses with hay at noon and work them hard in the afternoon, instead of feeding them the bigger portion of hay after they have rested a while at night. A horse's stomach is small, and he should be fed a little at a time often. Many a strong man has eaten a hearty meal, hurried into the bathtub, become drowsy, gone to bed and died before morning.

We should observe and learn from the practise and experience of others. The Grange is the great school for the farmer. Here the high and the low, the rich and the poor, the lettered and the unlettered, the experienced and the novice, may meet on a level. By attrition and the course of discipline which is only had in the Grange, all are modified and better fitted for citizenship.

I suppose there were 100 members present at the last meeting of San Jose Grange. There seems to be a desire to make the Grange what it was intended to be. With the talent we have in the Grange, who can doubt the result?

G. W. WORTHEN.

W. M. California State Grange,
San Jose.

How Shall We Advertise Our Grange and Its Benefit to Farmers?

By BRO. E. C. SHOEMAKER at meeting of Tulare Grange.

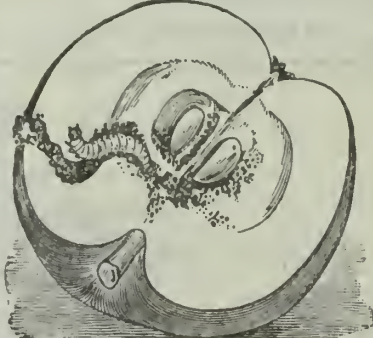
The members of Tulare Grange should earnestly continue in the same manner as they have so successfully done in the past, namely, to hold one or more picnics each year; also to invite our friends to sit with us at our usual noon hour, to assist us to eat of the good things our sisters have placed before us, and to drink not of the bitter cup but of the cup filled with pure fraternization; then at our annual elections to fill the offices with our ablest and most zealous members. We place in the Lecturer's chair one who has the ability to speak and write upon all matters of importance to our class and at all times keep the press of the country thoroughly acquainted with the workings of our Order. We place in the Master's chair one who has the Order at heart, one who can speak and write, in and out of the Grange, of its usefulness and benefits to the farmers. We also have others in the Grange who will, when occasion offers itself, uphold

the Order, both with tongue and pen, and send to our annual gatherings of the State Grange those whose reports of our doings will be ably and forcibly presented. Let this work be backed by all the members of our Grange. Let us talk, talk, talk Grange, and let everyone try to bring one new member in. This would double our influence in every way as well, especially in legislation of county and State. Bring the children in; it is the cheapest education you can give them. Arrange your programmes so that the young, as well as the old, have something to do, some duty to perform, some task to accomplish, thereby making the Grange meetings interesting and attractive, so that as the members mingle with their neighbors and friends they can speak of the great influence of the Grange, how its beautiful lessons are impressed upon the minds and hearts of its members, carrying with the refining influence of the moral and intellectual training all the attending blessings which association and cultivation bring. The Grange has been a great educator, not only to farmers, but to men in high places, who have learned to respect the rights of agriculture and the man who tills the soil.

The Grange should be the center figure in every farming community, studying up and discussing each and every subject that affects farm, home and school, and discuss these so broadly and thoroughly that no partisanship or sectionalism would be able to make the farmer work or vote against the Order which represents the farming interests of our country and mankind. Let our works show those outside of the Order that we are not organized for mutual admiration, but to do good for our fellow men. The Grange has the effect of creating and maintaining a feeling of fraternal relation and common pride in the profession of agriculture that can not be brought about in any other way. The fact that I wish to emphasize here is that every farmer owes it to himself, to his family and the pursuit in which he is engaged to identify himself with the Grange, because in no other way can he do so much to benefit himself and advance the interests of the entire community.

SPRAYING FRUIT TREES.

The question of spraying fruit trees to prevent the depredations of insect pests and fungus diseases is no longer an experiment but a necessity.



Our readers will do well to write Wm. Stahl, Quincy, Ill., and get his catalogue describing twenty-one styles of Spraying Outfits and full treatise on spraying the different fruit and vegetable crops, which contain much valuable information, and may be had for the asking.

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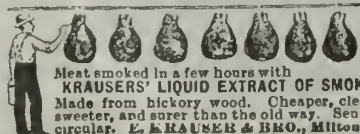
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The Lawrence-Williams Co., Cleveland, Ohio.—I sell your Caustic Balsam, and find it a good seller because it does the work. Would like some advertising matter; let a thing be ever so good, if you don't keep it before the people sales will fall off. I will do the rest.
E. F. STODDARD.

JAMES W. HOWSON, CHEMIST.

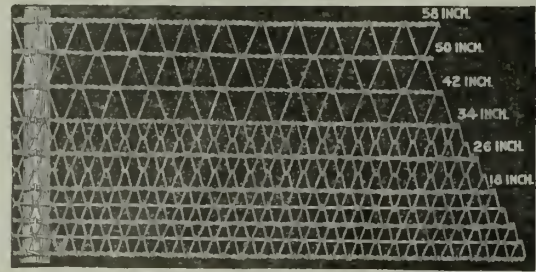
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NOTICE.

The Annual Meeting of the Stockholders of the GRANGERS' BUSINESS ASSOCIATION, a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California Street, San Francisco, at 10 o'clock A. M., Wednesday, the 11th day of April, 1900.
I. C. STEELE, President.
CHARLES WOOD, Secretary.



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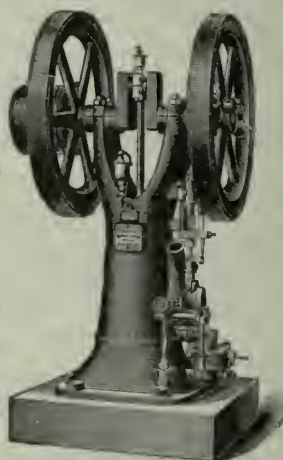
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THE APIARY.

Bitter Honey.

TO THE EDITOR:—Will you please tell me through the columns of your paper how much comb honey can be expected from orange blossoms per good strong colony? My bees have made a lot of honey this spring that is very bitter. What can it be made from? I think almonds or willow. Now, what can I do with it except feed back for winter? If I should leave it in the hives, would it be better later on? Do you think it would be good for malaria?—C. I. FORMAN, Orangevale.

TO THE EDITOR:—In answer to the above, I must say that, never having lived in an orange country, I can not answer the question in reference to orange-blossom honey.

As to bitter honey, my bees are doing the same as Mr. Forman's. As the willow is not blooming yet and only a few almond trees are in this part, it would clearly indicate that the honey is not from these sources. As to why apricots, peaches and pears should produce that kind of honey I am unable to say; but I see no other source that they could get it from. Leaving it in the hive would undoubtedly improve it, but am doubtful if it would improve it so as to be a marketable product. I would not advise putting honey of that quality on the market, as it would be detrimental to the trade, unless sold directly to the consumer as bitter honey. I shall leave mine in the hives, as I expect the bees will use it all up for brooding, etc., before the good honey comes on.

As to its value for malaria, I can not say; but, if Mr. Forman knows of any one having malaria, it might be well to take them some and let them try it, and, if he succeeds, he might bottle it and make quite a profit on it. I am sure it would not be as injurious to the system as most of the chill medicine we use. Hoarhound honey is valuable in pulmonary affections, and may not this be the same?—J. F. FLORY, Lemoore.

The Forest Area.

The former official estimate of the wooded area of the United States, placed at 26%, has been raised to 37% by the latest computation of the Division of Geography and Forestry of the U. S. Geological Survey. That office has issued a bulletin containing new figures on American forests, some of which tend to prove the national timber resources greater than is supposed.

The two latest States to be examined are Oregon and Washington. The former is estimated to contain 234,653,000,000 feet, B. M., in standing timber; the latter 114,778,000,000 feet. Destruction by fire has been exceedingly serious in Washington. On the assumption that the burned areas contained on an average as much timber as the untouched portion, 40,000,000,000 feet have been destroyed since lumbering began. This amount would supply all the sawmills of the United States for two years, and at a value of only 75 cents a thousand, means a dead loss to the State of \$30,000,000. The amount actually logged in the same period has been 36,000,000,000 feet.

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"SCIENTIFIC AND PRACTICAL REASONS why the harrow, although it follows the plow, is a much more important implement; thus the selection and use of the harrow is of greater moment than the choice and use of the plow," by Henry Stewart, is the title of an article in a pamphlet and catalogue sent out by Duano H. Nash of Millington, New Jersey, and Chicago, Illinois. The pamphlet will be sent free to all writing to Mr. Nash for it.

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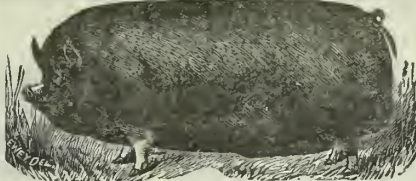
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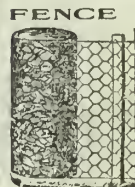
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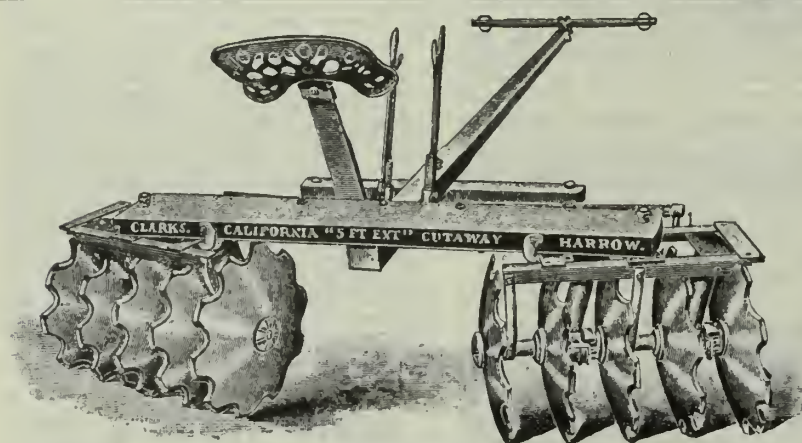
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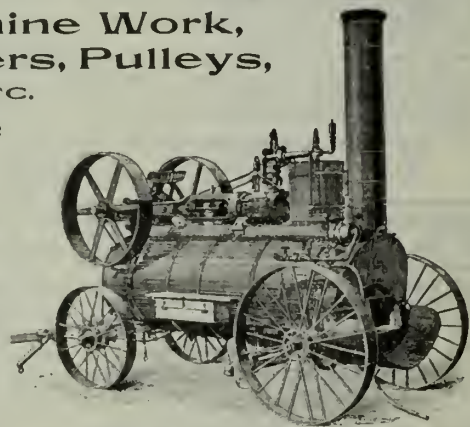
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 14.

SAN FRANCISCO, SATURDAY, APRIL 7, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Steer Feeding in Nevada.

The agricultural experiment station of Nevada at Reno has finished an interesting test of steer feeding, of which the results are worth knowing throughout the coast, and we are indebted to the station for the material which enables us to extend tidings of the experiment to our wide circle of readers. In the account published by Prof. McDowell, it is stated that the trial was undertaken to gain some knowledge of the amount of alfalfa hay necessary for one pound of increase, and this becomes of the greater importance from the fact that Nevada steers are chiefly, indeed almost exclusively, fitted for market on a ration of alfalfa hay alone. In the account some other feeds were used during part of the period, but alfalfa hay was the staple.

The engravings on this page show the animals selected for the trial. They were two years past when taken to the yard. No. 1 Hereford was given to the station by Mr. John Sparks of Reno, whom our readers know as the leading Pacific coast breeder of Herefords. No. 2 was a grade Hereford, while the other two were common range steers, though they probably had some good blood in their ancestry. Each steer had a box stall, 10x12 feet, containing a grain box and hay manger, each made tight to prevent any loss of feed. The steer had such exercise as desired, in a yard 16x50 feet, attached to each stall; this portion of the plan is much the same as that followed by cattlemen who annually feed thousands of steers in the yards at Reno.

As to the results of feeding alfalfa hay from the stack, the following tabular statement is prepared, all the weights being in pounds and the period covered being from December 11, 1897, to March 2, 1898.

Steer.	Weight at Beginning.	Hay Eaten.	Weight at Close Period.	Gain.	Feed for 1 lb. Gain.	Av. Wt. Hay Eat Daily.
No. 1.....	1350	2063.5	1445	95	21.7	25.4
No. 2.....	1160	2376.4	1262.5	102.5	23.2	29.3
No. 3.....	1230	2283.9	1342.5	112.5	20.3	28.2
No. 4.....	1090	2188.1	1235	145	15.1	27

The result of adding cracked corn to the alfalfa hay is rather curious, for only one of the steers apparently had any appetite for corn in addition to his hay. The trial was not long, extending from March 2 to May 9, 1898, all the figures being pounds:

Steer.	Weight at Beginning.	Hay Eaten.	Cracked Corn Eaten.	Weight at Close Period.	Gain.
No. 1.....	1445	1928.25	27.2	1565	120
No. 2.....	1262.5	1975.4	140	1400	137.5
No. 3.....	1342.5	1829.9	13.3	1380	37.5
No. 4.....	1235	2006	20.3	1309	74

There was, however, more corn and some bran used at other times, as is shown in the following table which covers the whole period for each steer, viz: No. 1, Dec. 11, 1897, to Dec. 14, 1898; Nos. 3 and 4, to May 11, 1898; No. 2, to May 27, 1898.

Steer.	Weight at Beginning.	Hay Eaten.	Corn Eaten.	Bran Eaten.	Slaughtering Weight.	Gain.
No. 1.....	1350	10254	201.7	655.3	1812.5	462.5
No. 3.....	1230	4157.3	13.3	.....	1380	150
No. 4.....	1090	4237.9	20.5	.....	1309	219
No. 2.....	1160	4825.7	244.5	.....	1450	290

The comparison of live and dressed steers is given in the following table, and the interior aspect of Nos.

1 and 3 is given in the engravings on page 213 of this issue.

Steer.	Weight at Beginning.	Slaughtering Weight.	Dressed Weight.	Lbs. Dressed Meat per 100 Lbs. Live Weight.
No. 1.....	1350	1812.5	1120	61.7
No. 2.....	1160	1450	811.5	55.9
No. 3.....	1230	1380	782.5	56.6
No. 4.....	1090	1309	739.5	56.49

The table gives the weight of each steer at the beginning of the feeding trial, the weight at the time of going to the slaughter house, the dressed weights, and the pounds of dressed meat for each 100 pounds of live weight. While steer No. 2 came up well to steers Nos. 3 and 4 in per cent of dressed meat to live weight, the hay and corn eaten by steer No. 2 was much in excess of that eaten by steers Nos. 3 and 4. In the table the slaughtering weight is given without shrinkage.



Steer No. 1, Hereford.



Steer No. 2, Hereford Grade.



Steer No. 3, Common Stock.



Steer No. 4, Common Stock.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, April 7, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Steer No. 1, Hereford; Steer No. 2, Hereford Grade; Steer No. 3, Common Stock; Steer No. 4, Common Stock, 209. Side of Steer No. 1; Quarters of Steer No. 3, 213.
EDITORIAL.—Steer Feeding in Nevada, 209. The Week; Fruit Affairs, 210.
QUERIES AND REPLIES.—Thinning Fruit by Men and Birds; Grain Aphids; New Trees in Old Places; Flg Growing; Bottle Tree Seedlings; The Air Cell, 211.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending April 2, 1900, 211.
STATE BOARD OF AGRICULTURE.—California Agriculture in 1899, 212.
HORTICULTURE.—Prune Growing in Washington, 213. The Cherimoyer, 214.
THE DAIRY.—Holsteins in the San Joaquin, 214.
SHEEP AND WOOL.—Goats as Land Clearers, 214.
AGRICULTURAL REVIEW.—215.
THE HOME CIRCLE.—Can You Answer? Bide Your Time; Her Proposal; Indigestible Fried Food, 216. Caring for the Baby; How to Get Health; Characteristics of Philadelphia Women; Own Your Home, 217.
DOMESTIC ECONOMY.—Domestic Hints, 217.
THE MARKETS.—Produce Market; Fruit Markets, 218-210.
CORRESPONDENCE.—Napa and Lake Counties, 221.
PATRONS OF HUSBANDRY.—From the Worthy Master; A New Grange, 222.
THE VETERINARIAN.—The Horn Fly; Answers by Dr. Creely—Lump Jaw, 223.
MISCELLANEOUS.—Agriculture and the Census; List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 220.

The Week.

April began with a very welcome departure from the weather styles of March and though rains have not been heavy the amount of water and the moist air have given vegetation a new start. The State was well covered by the showers. In some localities there was heavy and injurious hail but fortunately not over very large areas. Such frosts as have come are still light and things are going well wherever the winter rains were sufficient for good growth. The State products as a whole still promise to be very large.

Wheat has improved a little at the East and is stronger in tone here, though unchanged in rates. The rain improves the crop outlook and offsets to that extent the disposition to advance. Freights are a trifle easier, but there are still too few ships for large business. Barley showed an upward tendency since our last report, but has been pulled back by the rain—not lower than a week ago, however. Corn is the same as last week; Eastern is too high to bring here, and California corn is reported too soft to suit grinders. Hay is still in bad shape, and the rain hurts it in the market as much as it helps it in the field. Heavy receipts of bran from Oregon have checked any local advance. Other millstuffs are unchanged. Hogs are firm; veal and lamb lower; beef and mutton steady and quiet. Butter is weak and lower, as less is called for at the North. Australian butter is now going into British Columbia and checking orders for California. New cheese is weak and old cheese is scarce, both here and at the East. Eggs are temporarily advanced and unsettled by light receipts, which makes it impossible to fill orders at last week's rates. Whether producers are holding back for Eastern trade or filling their incubators does not appear. Prices are 1 and 2 cents per dozen higher. Young chickens are doing better again, while old fowls are slow, owing to considerable Eastern receipts in that class. Beans are firm all through, with small white beans as favorites. Potatoes are unchanged, with choice still scarce and high. New potatoes are unchanged. Onions are almost out of sight. Sales for shipment have been made up to \$3.60 per cental, and Australians sell above that. Oranges are firm and fancy oranges in light supply and higher. Common oranges are unchanged, but are selling better. Lemons are unchanged and limes lower. Some cold storage apples are selling well. Dried fruit is quiet. Prunes are moving, but at low prices. Almonds are moving freely, but no advance. Wool is arriving in fair quantity, but no business is reported yet. The Eastern market is a little weak and buyers here are shy.

Fruit Affairs.

The commercial phases of the fruit industry assumed unusual activity with the opening of April and bid fair to hold it through the month and even later, and the outcome may be the readjustment of things on a better basis than has been attained hitherto. First was the meeting of the Inter-State Commerce Commission in Los Angeles, at which testimony was taken on many of the matters which have vexed the citrus fruit interest and is of hardly less moment to the deciduous side of the industry as well. It was shown by abundant testimony that the rebate abomination was even more serious and irregular than the uninitiated had suspected, and they always knew that it has been bad enough to seriously menace the performance of the shipping business. Rebates from all sources and of all dimensions were shown to have been paid to car owners and to large shippers, and to car owners who were themselves shippers, and thus came into competition with the fruit which they carried for others and knew all the time where they could most seriously strike their own customers and advance their own interests. It seems to have been a case of dishonorable business all through in which the shipper who did not own a car line had no chances for fair dealings. There is a long story to it, which the Commissioners patiently heard, and the result can hardly help being the reduction of some features of the evil. It is clearer than ever that the rebate business, which has robbed the grower ever since the trade became large, must be ruled out. The railways should own their own rolling stock and treat all shippers alike, and unless this can be done by the roads and they thus free themselves from the tribute which they have paid and free their employers, the growers, from the extortions which have been practised upon them, they cannot make any claim to self respect. The idea of great transeontinental corporations being held up by a lot of private car line owners is not creditable to these companies which claim to be doing so much for the development of the country.

Another commercial phase of fruit affairs is seen in the assured success of the prune proposition, now widely known as the California Cured Fruit Association. On April 1 a statement was made at San Jose that the Association then had under contract 31,000 acres of bearing prunes, which, estimating 1½ tons cured fruit to the acre, gives a yield of 38,775 tons, 2000 pounds each, equal to 77,500,000 pounds, or if (as some contend the average yield to be one ton of cured fruit to the acre), the result would be as follows: 31,000 acres, at one ton per acre, 31,000 tons of 2000 pounds each, equal to 62,000,000 pounds. The estimated output of the State for the past year is 85,000,000 to 100,000,000 pounds. The figures on the prune acreage represent bearing trees only. Since April 1 larger acreage has been signed up, and all through the present week the work promises to go on rapidly. This insures the success of the Association, as, according to the instructions of the convention, the management was to proceed to carry out the purposes of the Association if this percentage was secured by April 1. In order to be doubly sure that the per cent has been attained, the meeting of the full Board of Directors which was to have been held on April 2 has been postponed one week, or until April 9, thereby giving the growers one more week for the signing of contracts. An extraordinary effort will be made during the week to increase the percentage to 90, as is required by the packers' contract, or so close to it that all questions pertaining to this part of the business may be settled at the coming meeting of the Board. The packers who have been in opposition to the Association have signed the contracts, and the whole business looks better now than it has hitherto.

Another matter which culminated during the week was the show of hands on the new and enlarged plans of the Raisin Association. The new proposition was to contract the crop for three years and buy the packers' interests, so that the growers could pack their own crop. This year's crop is under the contract made last year, so that the new proposition was with reference to the future. It transpired at the meeting in Fresno on Monday that too few had signed the new contract. Instead of the 90% of the raisin acreage desired to control the market after this season, the Association has received signatures

to new contracts covering only 48½% of the total acreage. After discussion the time for signing these contracts was extended thirty days. This gives all the rest of the month to increase the contracted acreage and assure the future of the Association. If one doubts as to the special points involved, he ought to get some strength from the general aspect of it. Where was the raisin interest before the organization was made? Where is it now? Reports at the meeting showed that the total weight of raisins delivered last season was 36,455½ tons, of which 842½ tons remain on hand. The amount received for the crop of 1899 was \$2,785,143 and the value of that portion remaining on hand is \$67,440. The returns are equal to 4½ cents a pound for the whole crop, as against 2½ cents per pound in 1898. Only eighty-four cars remain on hand, as against 672 cars in the previous year. It ought not to be hard to get strength from this aspect of the case. The Association is trying to do more in the future and naturally encounters greater opposition. Is it not the time when it should be the more strongly supported?

THE question of injury to vegetation by fumes set free by mining and manufacturing processes crops up here and there all over the world, and California has a case of that kind now pending in Shasta county, where two fruit growers have brought suit in the Superior Court against some copper smelters for \$15,000 damages, alleged to have resulted from the effects of the smelter fumes upon the plaintiffs' almond and fruit orchards. The plaintiffs further ask the court to adjudge the smelters and roasters a nuisance and to order a permanent suspension of the work. The poisonous gases from the open-air roasters particularly have destroyed vegetation until, it is said, not a leaf nor a blade of grass may be found within a mile of the smelter. The copper company, however, has in several instances promptly settled the claims of parties whose fruit and other trees have been proved injured by the fumes. If the present suit is successful, others like it will be brought.

THE California Wine Growers' Corporation is winding up its activity and distributing the proceeds of its recent sales. Recently three distributions have been made to the shareholders. One of these was of 1 cent a gallon for the red wines of the vintages of 1896 and 1897, the second was for one of 2 cents a gallon for white wines of the same vintages, and the third was of 2½ cents a gallon for the white wines of 1898. In all about \$125,000 has been distributed on these accounts. Thus far the distributions for the seasons in question have been 9 cents for red wines of 1896 and 1897, 13 cents for white wines of the same years, 11½ cents for red wines of 1898, and 14 cents a gallon for the white wines of the last-named year. It is probable that one more distribution will suffice to close up the business of the corporation, and then it will remain inactive until conditions arise which will wake it again.

QUITE a substantial contribution to a popular New York charity was indirectly secured by the gift of a carload of oranges by the Southern California Fruit Exchange. The car contained 365 boxes, containing from 80 to 200 oranges in a box. Many of the boxes were resold several times, the buyers donating the amount at which they secured the boxes until the final receipts from the car were \$4631, which is more than a carload of fruit ever sold for before. The proceeds went to St. John's Guild and will be expended next summer in giving excursions to the sick children of the poor—a sort of floating hospital having been contrived for that purpose.

IT is announced that as a result of the conference at Chicago a few days ago of manufacturers of wagons, carriages, etc., an average advance of 20% over the old scale is now in effect. The blame for the necessity of making the increase is put on those who furnish the wagon and carriage concerns with material for the construction of their output.

COUNTY HORTICULTURAL COMMISSIONER EHRLHORN of Santa Clara has been given a leave of absence for six months to go to South America to hunt something which will destroy the black scale. He goes to Bolivia first.

QUERIES AND REPLIES.

Thinning Fruit by Men and Birds.

TO THE EDITOR:—How large should peaches be before being thinned, also apricots? Do you know of any approved method of keeping birds from taking one's cherry crop?—TRIPLE RIDGE, Napa.

There can be no exact rule as to size of fruit before thinning. Theoretically it would be well to wait until the small fruits which are naturally prone to drop have fallen, and do the thinning as soon as it appears reasonably sure that too many fruits will stay in place. This is not wholly dependent upon size: it depends upon the habit of the tree and the aspect of the fruit itself. Trees which are known to be persistent bearers in the immediate locality can be tackled by the thinner sooner than others which have a natural disposition to drop. Another theoretical point is that thinning should be done before the hardening of the pit to save waste of substance by the tree. Between these points of theoretical character there intrudes the practical consideration that unless a very large force of men can be commanded, if you wait too long before starting to thin, much of the fruit will have become too large before you finish. The fact is, then, that you cannot depend upon rules but have to thin as quickly as you can after the fruit is seen to be strongly set and local danger of frost is chiefly past, and do a lot of thinking for your own place on these two things. Most fruit is thinned when from half to three-quarters of an inch in diameter, but it is better to thin at almost any size than to allow the tree to carry too much. The effect of thinning upon the remaining specimens is realized even when the fruit is of considerable size: in fact the picking of the largest fruit when mature enough for shipment improves the size of what is left for later ripening.

We do not know of any special arrangement for saving cherries: poison and guns are the chief agencies employed—the latter being naturally the most effective when there is plenty of ripe fruit to be eaten.

Grain Aphis.

TO THE EDITOR:—I send some grain, both wheat and barley. Up to one week ago both looked fine. Since then they have begun to fade. At first I thought it was from the want of moisture, but upon a thorough examination I found that was not the case. After a few days I could see the under leaves on both barley and wheat were looking bad, and on a closer examination I found a small bug—in fact, hundreds of them. Also I observed after a few days that they turned to a small black fly. I also find it all over the island where the grain is looking bad. What is it, and is it the cause of the trouble? I am sure it is not for the want of moisture.—GROWER, Union Island.

The grain is infested with the grain aphis or grain louse. It is a pest closely related to the louse of the bush, etc. Sometimes it occurs in such numbers as to destroy the thrift of the grain and cause a loss of crop. Usually, however, it is checked by conditions which are not favorable for its multiplication or by some of its natural enemies. The result is that, though the insect has the power to destroy a crop, it very seldom does much injury. The prevalence this year is due, we think, to the dry March, for in the absence of rain the insect always multiplies most rapidly, and the plant is in worst condition to survive its exhaustion of sap and shows distress such as our correspondent describes. Good, heavy April showers, such as have fallen since the above letter was written, will go far to reduce the pest and save the crop, and frequent showers are greatly to be desired. There is, probably, no artificial remedy which can be applied to grain which will not cost more per acre than the crop is worth.

New Trees in Old Places.

TO THE EDITOR:—I have recently dug up thirty acres of cherry trees on my Butte county ranch because of their persistent refusal to bear. I have planted in their places trees of Burbank's sugar prune. I am exceedingly anxious that the replants shall live. Two years ago I planted Nichols cling peach trees on about five acres of land from which cherry trees had been removed, and they have since grown remarkably well. I attribute this to a very good coating of barnyard manure. I have likewise put around each of the sugar prunes a good coating of well-rotted barnyard manure. The question which I seek to have answered is: What do trees take from the soil which causes replants to die within a few years or become sickly? I should think it would

be easy to analyze the soil and find out what has been taken from it and artificially supply the lack. Does barnyard manure supply what has been taken from the soil by the trees that have been removed? In regard to the oak question, I find that peach trees die where oak trees have been removed, but plum trees, prune trees, pear trees and apple trees do not seem to pay any attention to the fact that oak trees grew where they had been planted.—ORCHARDIST, San Francisco.

Certainly barnyard manure supplies all that is needed for the growth of the trees; it is a complete fertilizer. The failure of young trees in the place of old ones (when the whole ground is cleared and young ones are, therefore, not forced to struggle with large, growing trees) is probably due rather to the root disease engendered by the spread of fungus, from the old, rotting roots which remain, to the roots of the young trees than to soil exhaustion. The reason why peaches are most apt to fail is due to the greater susceptibility of the peach root to such attack. The English walnut acts like the peach in this respect. Soil exhaustion is, of course, likely to occur, especially on thin or shallow soils, when old trees which have borne fruit crops for years are removed, and analysis would show it, but one crop of non-bearing trees certainly cannot exhaust the plant food from your deep Feather river soils. If, however, you wish to protect yourself against possible exhaustion, there is nothing better than barnyard manure, if you can get it cheap enough.

Fig Growing.

TO THE EDITOR:—Which is the best locality for fig growing in California?—R. T. W., Chicago.

We have had quite a bunch of such questions from the East recently. No doubt the many reports of the introduction of the blastophaga to this State is arousing new interest in the fig, and in this connection it may be stated that evidence is accumulating that the wintering of the insect, under the care of George C. Roeding of Fresno, is being satisfactorily accomplished. It is reported from Fresno this week that the mamme figs in which the blastophagas have hibernated are giving forth insects, which are entering the profichi figs formed on the same trees and maturing in June. A new phase in the study of capricification is that the insects emerge from the pulpy as well as the fibrous figs. This indicates that the winter has been well passed.

As to the best locality for the fig, it can be said that there is no single locality which is best. It is rather a question of conditions which may exist in many localities in the interior valleys and foothills. The main conditions to avoid are these: low summer temperature, which interferes with proper ripening and gives a thick skin. For these conditions and the additional reason that the autumn weather is apt to be unsuitable for drying, it is not wise to grow drying figs in the coast valleys. Another condition to avoid is frost; consequently, the low places in the interior valleys should be avoided, and other treacherous places in the smaller valleys must be shunned. Ruling out all these, there are left the warmer higher lands of the interior valleys and the lower foothills in the Sacramento and San Joaquin valleys and their tributary valleys and in southern California, away far enough from the coast to get good ripening and freedom from fig souring during the ripening season. There are tens of thousands of acres of ideal fig lands in the State, and, if the blastophaga catches on well, we can grow more figs than the whole world can eat.

Bottle Tree Seedlings.

TO THE EDITOR:—I planted some seeds of the Australian bottle tree in October last and they are coming up nicely now. Can they be transplanted? If so, when? Some are forming the second lot of leaves.—READER, Los Angeles county.

They can be carefully transplanted as soon as the second leaves are well matured, providing you give them proper degree of shade and moisture; but if they are to have less attention, you had better not move them until after the ground is well moistened by the fall rains. This will enable them to establish themselves well before cold weather comes on.

The Air Cell.

TO THE EDITOR:—Will an egg which has no air cell hatch?—READER, Sycamore.

We never saw an egg without an air cell and we cannot speak authoritatively. We do know, how-

ever, that there is great difference in the size of the air space or air cell, and that it enlarges several times its area during incubation, and that an egg which might be thought to be full would have air space enough later to serve the purposes of the chick. If any one knows more than this about it, will he kindly say so?

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 2, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

SACRAMENTO VALLEY.

Favorable crop conditions have continued during the week, with temperature somewhat above normal, and no rain until Sunday. Grain is in fine condition and growing rapidly. The rain of Sunday and Monday will greatly benefit late sown grain in some sections, and improve alfalfa and other crops. Potatoes are making good growth. Green feed is abundant. At present the outlook for a large yield of grain and hay is better than in any season for several years.

There are many reports from almond growers of the serious dropping of the young nuts, and various reasons are assigned; the setting has been so heavy, however, that it is believed a good average crop will be matured. Grape vines are looking well, and all deciduous fruits are advancing satisfactorily, with prospects of a large crop. There was a heavy frost in some sections March 28, but no damage was done.

COAST AND BAY SECTIONS.

In the northern counties the weather has been generally warm and clear, bringing crops forward rapidly. Rain on Sunday and Monday was beneficial to grain, pasture and fruit, though none of these crops have suffered for lack of moisture. Grain and hay continue in excellent condition, and prospects remain good for a large yield. Volunteer hay is nearly ready for cutting in some sections. In the southern coast counties warm, dry winds have dried the soil, and grain was needing rain, which fortunately commenced falling Sunday. Some grain fields in San Luis Obispo county have been attacked by cut worm.

Frost on the 29th and 30th of March caused but little damage; some sections report that it was beneficial in thinning out fruit, and that grape vines were slightly injured in a few exposed places. Sour sap has killed some of the prune trees in Sonoma county, but the loss will be light. Deciduous fruit prospects continue good. Irrigation from pumping plants is in progress in portions of Santa Clara county.

SAN JOAQUIN VALLEY.

Clear weather, with warm days and cool nights, prevailed until Sunday, when it became cloudy. Scattering, light showers fell Sunday night and Monday morning in the central and northern portions of the valley. The rain was much needed for late sown grain, which was commencing to show the effects of the dry weather, especially in the southern portion of the valley. Early sown grain is looking well and in most places is beginning to head. Haying has commenced in many localities. In some portions of the valley pasture is showing the effects of the dry weather. Fruit is setting well; the trees are generally in full foliage and prospects are good for a large crop. Light frosts were quite general on the 27th and 28th, but no damage was reported. Some hay is being shipped to southern California. The wool crop is being shipped.

SOUTHERN CALIFORNIA.

Warm, dry weather has continued during the week, with westerly winds and no frost. Wheat is said to be withstanding the drought in a remarkable manner in some sections, but will probably not hold out more than ten days without rain. There will not be more than half a crop of grain, under the most favorable conditions, and the hay crop will be very light except on irrigated ground. In some places the failure of grain has become so certain that stock has been turned in the fields. Deciduous fruit trees are advancing and in some orchards the young fruit is beginning to set. Apricots have fallen badly in some localities, but will be an average crop if normal conditions prevail. Citrus trees are loaded with blossoms and well-formed fruit. Irrigating water is becoming scarce in some sections.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, April 4, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka.....	.74	44.10	31.53	40.16	44	64
Red Bluff.....	.96	20.03	19.37	24.44	42	82
San Francisco.....	.44	15.92	13.91	18.68	44	76
San Francisco.....	.45	17.47	15.38	21.31	48	70
Fresno.....	.24	7.33	6.76	8.25	38	86
Independence.....	.00	2.78	1.16	4.46	36	76
San Luis Obispo.....	.26	15.10	14.77	16.26	40	82
Los Angeles.....	.12	5.87	4.79	16.50	48	80
San Diego.....	.21	3.37	4.58	9.14	48	40
Yuma.....	.00	0.77	1.34	2.84	50	94

STATE BOARD OF AGRICULTURE.

California Agriculture in 1899.

NUMBER V.

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HEMP.

One California industry which is yet in its infancy but gives promise of great development is the growing and manufacturing of hemp. This plant grows to perfection here, yields heavily, produces a splendid fiber and can be produced without excessive expense. It is adapted to a variety of uses now served by imported foreign fibers, and our people might consider its more general culture to their profit. The most extensive producer of hemp in California is John Heaney of Gridley, Butte county.

Wm. J. J. Cunningham of Salem, Oregon has recently conducted experiments at the jute mills at San Quentin, which demonstrates that this fiber can be manufactured into grain bags of first quality. It is represented to us that California hemp is equally valuable for the manufacture of twine, canvas, sailcloth, summer suiting and ropes of every description. Curiously enough, our State law will not permit of the purchase of California fiber for use in the prison bag factory, but limits the purchase to "Anglo-Indian jute." This law should certainly be amended to permit of the purchase by our State authorities of California hemp, if it is suitable for manufacture into grain bags and can be purchased without excessive cost.

HONEY.

The honey product of California has never been as large as our conditions would warrant. In our even, temperate climate, where flower and fruit growth is so abundant, honey of various flavors and the best quality in the world can be produced. The white sage, orange blossoms and clover of the south, the alfalfa, fruit and blossoms of the central section and the natural flowers, fruits and grasses of the north can not be excelled as bee foods. The two recent seasons of light rainfall in the south has been very injurious to the bee interests there and has already reduced the yield of sage honey. There is a good opening for persons of experience to locate in California and engage in this business.

Our yield for 1898 was about 1,800,000 pounds; the yield for 1899 is estimated at from 1,800,000 to 1,920,000 pounds.

MISCELLANEOUS CROPS.

All varieties of beans flourish here, the high-priced Lima bean grown in our southern coast climate, principally in Ventura county, reaching a perfection attained in no other part of the world. Bayo, pink and large and small white beans grow and yield heavily in many sections, chiefly on the San Joaquin and Sacramento river bottoms. The crop is generally a very profitable one, notably the crop of 1899. Of beans we ship out of the State, in addition to what we consume at home, over 50,000,000 pounds annually.

Considerable tobacco is now grown here and our area could be much extended with profit. Experience is required in the culture, selection of varieties and curing of this product, and for persons possessing it this industry promises profitable investment.

Vegetables of all varieties are grown for domestic consumption, and potatoes, cauliflower, onions, cabbage and celery are extensively grown for shipment out of the State. It is estimated that nearly 1500 carloads of celery will be shipped out of Orange county to the Eastern market. Other vegetables to the extent of several thousand carloads go chiefly to Alaska and the Rocky Mountain States.

We grow practically a limitless variety of products which it would be impossible for us to notice within the limits of this report. It may be safely said that whatever will grow in a temperate and even climate, upon a fertile soil, can be grown in California.

HORSES.

The supply of horses in California, in common with other sections of the United States, is now very short. This results from a variety of causes, chief of which was a reaction from a previous oversupply and a stimulated market and the past years of agricultural depression. The market, however, has now recovered its tone, and the indications are that for many years the breeding of proper types or styles of horses will be a profitable industry. The excellence of California horses is acknowledged all over the world. In the breeding of fine stock, not only in horses but in cattle, sheep, poultry and swine, our State has been fortunate in the enterprise of her wealthy citizens. They searched the world and brought from her uttermost limits the finest specimens of breeding stock. From these animals and their descendants our State has grown famous.

Trotting horses bred in California hold many of the world's records, while annually they or their de-

scendants win a very large proportion of the trotting races contested in America. There is, in consequence, an active Eastern demand for California trotters, and many carloads are annually shipped to the great Eastern markets at Chicago, Cleveland and New York. From these markets, and from private sales made here, these horses go all over the East and to Europe. A very large revenue is realized to California from this source. Some of the most famous trotting sires of the world have been developed and owned in California. In too many instances their owners have been tempted by sensational prices to part with them to Eastern breeders. We have been fortunate enough to retain and develop worthy successors to them, but it is to be hoped that hereafter when the owner of any horse here which has shown phenomenal prepotency concludes to dispose of him some of our many wealthy breeders will see that he does not leave California.

In the breeding of thoroughbreds California acknowledges no superior. We have here leading representatives of every prominent family in the world. Famous horses representing the cream of those countries' best blood have been purchased in England, Ireland, New Zealand, Australia and in our Eastern States and are now owned and being bred from in California. These animals with world-wide reputations, which the wealth of some of our enterprising citizens has enabled us to procure, have made our State famous as a nursery of thoroughbred horses. Horses of this type from California are sold all over America, frequently for great prices, and realize a large revenue. Mr. J. B. Haggin has recently commenced shipping large numbers of thoroughbred yearlings from Rancho del Paso, in Sacramento county, to London, to be sold there in competition with English-bred colts. Hon. John W. Mackay, a former member of our board, has taken two such consignments there without loss or injury, and reports the venture successful. It is probable that hereafter that and other European markets will be opened up extensively to horses of California breeding.

For the breeding of draft horses and mules we have a supply of the best blood, if properly taken advantage of. While too much can not be said of the excellence of the horses bred on our breeding farms and by many private breeders, it is undeniable that the majority of our farmers do not breed intelligently nor produce the type of horse which would most economically serve their purpose or sell to the best advantage. While the horse market may truthfully be said to be now active, it is only in certain directions and for certain classes of horses. In thoroughbreds it is purity of blood, size, stamina and speed. To attain these qualities is the problem which presents itself to the breeder and which he must solve for himself. For that class of horse there is a ready market at good prices. For the short or unfashionably bred horse there is no demand, nor for the thoroughbred without speed, undersized or without stamina. In trotters for speed purposes the first requirement is, necessarily, capacity to go a fast mile, and, if necessary, to repeat it several times in a race. But the greatest demand is for high-formed, good-sized, pure-gaited horses with good action and endurance. There is a constantly increasing demand for very speedy, good-sized, well-mannered trotting horses for road purposes, and this market is one of the most profitable to cater to. Breeders will find no difficulty in obtaining proper animals from which to breed this type of horse, as among any of the leading families of the American trotter faultless specimens are easily attainable. In breeding for trotters of good size, good looks and good manners, if the breeder fails to get the speed, he still has a useful and handsome horse fit for many purposes. Undersized, vicious, ill-formed or rough-gaited horses are daily becoming less salable, and breeding from such types, no matter how speedy, will not prove profitable.

Another character of horse which can profitably be bred is of the coach and carriage class. This horse must be of good size, of some solid and popular color and of handsome conformation. He should have good action and spirit, intelligence and style. Speed in such horses is not necessary. Animals of this kind are always salable at good prices. They can be bred in various ways, properly from some of the recognized coach breeds, from the hackney and the Cleveland bay. It is probable, however, that this class of horse can be bred with greatest certainty and in his highest perfection from selected animals of some of the leading trotting families.

Draft horses are in good demand and the judicious breeding of this class of horse is desirable. The breeder might safely select any of the leading breeds of draft stock as his fancy dictates, so long as he breeds a large, active horse, with good feet and legs, of good spirit and conformation.

It might be well for our breeders to consider the Hawaiian and Philippine islands, China and Japan as a market for horses and mules. The opening up of these islands to American and European occupation will certainly create a considerable demand for such animals. California, because of her location, should have the first call on that market, and if our breeders first occupy the field they should be able to hold it to their own and the State's advantage.

(TO BE CONTINUED.)

ENTOMOLOGICAL.

Scale Killing on Evergreen Fruit Trees.

From a Paper by R. C. ALLEN of Chula Vista, San Diego County, at the County Horticultural Society Meeting.

Probably few, if any of us, need to have impressed upon us the necessity for growing clean fruit. However expensive it may be to clean the tree, it generally costs less than to wash the fruit, without taking into consideration the health of the tree and the vastly superior quality of the clean over the washed fruit.

Our commonest pest is the black scale, but the purple is becoming nearly as widespread and far more dangerous. The long or Glover's scale is very like it, and equally dangerous to the life of the tree, though it seems to be comparatively rare.

Another family comprises the red and yellow and the greedy lemon peel scale, of which the two former are especially deadly. Fortunately the scale has never spread to any extent in this locality. It is considered even more serious as a pest than the purple scale.

If one begins with young trees by means of good sprays it is possible to keep the orchard practically clean and to prevent the scale from becoming thoroughly established. In such a case as when the trees have become too large to clean effectually by means of a spray, it will still be possible to clean them by fumigation and keep them always in good condition by an application every second year; whereas, if the orchard be once allowed to get thoroughly dirty, it will be found a difficult thing to get clean again and the expense will be much greater than if it had been kept clean from the beginning.

There are three methods of cleaning orchards from scale insects: First, by means of spray washes; second, by fumigation; third, by predaceous insects.

First, many spray washes are effectual in the destruction of scale life, when applied at the proper stage of development and before the scale has become too hard and too firmly fixed to the tree to be penetrated by the wash.

The resin and caustic soda wash is perhaps as effectual as any, but it has the double objection that unless applied with great care it will mark the fruit and also that frequent applications are detrimental to the best health and vigor of the tree. The tree is likely to become hidebound.

FASHIONS IN SPRAYS.—Every year brings its new wash, just as surely as every Easter brings its new fashion for bonnets. It has sometimes seemed that right here is an indication that each new wash is not the unqualified success that its fond advocates have claimed.

Last year it was lye and water, pure and simple, and we were told that it was sure death to every form of injurious life that ever visits a tree. It seems almost too good to be true and it probably was so, because this year we hear of it no more, but are told that we have found the millennium in the distillate spray.

I myself believe that this latter, the distillate wash, discovered by Mr. Kahler of the Crocker-Sperry ranch at Montecito, is probably the most practical spray yet used. However, the use of any spray carries with it the inherent impossibility of reaching every part of a large tree.

I visited the Crocker ranch last month, and while the good work of the spray was plainly to be seen, still I question whether the orchard can receive two or three applications a year without some loss to the vigor of the tree.

The trees on the Crocker ranch have not yet reached the size where it is impossible to do a practically perfect job of spraying, and at the time when the use of the distillate spray was begun they had become so loaded with the accumulation of years that nothing but repeated applications of sprays or fumigations could have been effective. Fumigation in such a case would have been very costly, but when the trees have grown and thriven for a few years more, owing to their size, it will probably be found that fumigation will be the cheaper remedy of the two.

After a careful investigation of the trees, I was satisfied that the distillate spray is all that is claimed for it, so far as its effectiveness in killing the scale which it touches is concerned, and that Mr. Kahler deserves the thanks of the citrus fruit growers of California for discovering it for us. It carries all the insecticide properties of kerosene emulsion with some great advantages. When once emulsified, probably owing to its heavy body, it remains so without separating. Also for the same reason it remains on the tree much longer and I was assured by Mr. Kahler that it would find its way under the edges and loosen from the bark the old hard shells, thus killing the eggs beneath. This, of course, is a very important point. Another point he spoke of, was that owing to the thickness of the fluid it was not so likely to run down to the roots and injure the tree.

FUMIGATION.—Secondly, we have the method of killing scale by fumigation. Of course we are all familiar with this process and nothing need be said in explanation of it. Practically I have found it the

only effective and satisfactory method since my trees became of good size.

Its chief advantage is that it kills every scale on your tree which is in a stage of development rendering it possible of being killed. If you watch and take your orchard when all the scale is in that stage, you can kill every scale bug on it. It may not always be possible to find this state of affairs, especially with grape fruit trees, but I have had practical success with oranges and lemons.

Fumigation is expensive, but not so expensive as it is to grow dirty fruit. In a healthy orchard, well supplied with moisture, it no shock to the trees, as spraying almost always is, but on the contrary seems to invigorate them. Where trees are dry and out of condition it is not wise to fumigate, for under such circumstances it will prove a shock.

The only stumbling block which I find on our ranch at Bonita is with the black scale on the grape fruit. For some reason this tree seems to have a great attraction for the black scale and it will hatch on it at almost every season of the year. Therefore you find the scale in all its stages of development at the same time and no time when all are in a state possible of being killed.

Such being the case, it is my intention next summer to run over the affected grape fruit trees with the distillate spray and try and bring them into line so that a fumigation two or three months later will finish them off.

If black scale were all that we had to contend with, as is the case at Santa Barbara and Montecito, the spray might do, though I believe that even then, it would be more economical to fumigate.

Such, however, unfortunately is not the case. We have far more dangerous pests in the purple, the yellow and even the red, which has appeared in this locality, though I am glad to say that it has never spread to any extent. If we mean to keep our orchards we cannot afford to play with such enemies as these. It seems to me that we have too much advocacy of the cheap instead of the effective. We all know what fearful inroads these enemies have made in the past few years.

With these dangers in view I have no hesitation in saying that the man who cannot afford to keep his orchard clean at the expense of fumigation, that being at the present time the only effective remedy we know for these pests, cannot afford to keep his orchard at all. It is a luxury in which he ought not to indulge at the expense of himself and his neighbors. He may rest assured that it will never be a source of profit.

REMEDIES.—So far as our experience has yet gone, predaceous insects can be relied upon in only two cases, namely, for the destruction of the cottony cushion scale and of the black scale on olive trees, but not on citrus trees.

In citrus orchards, for scales other than cottony cushion, we must either spray or fumigate. On young trees spraying is fairly effective and satisfactory, but on full grown orchards it seems to me that if anything has ever been demonstrated by experience it is the superiority of fumigation. Nobody ever did or even can reach the whole of a large tree with a spray.

While some improvements have been made in washes, yet nothing has been discovered which is more effective in killing scale than the old resin wash which was used a dozen years ago. Go into Orange county to-day, where this wash was first used, and ask any old orchardist what he thinks of spraying as compared to fumigation, and it is safe to say what his answer will be. He will have no use for spraying. Fumigation has saved Orange county as far as citrus fruit growing is concerned. In San Gabriel valley, Azusa, Pomona, Ontario and throughout that section they will tell you the same story.

HORTICULTURE.

Prune Growing in Washington.

By J. A. BALMER, Washington State Agricultural College, Pullman.

It may be said that the whole process of prune growing in our State is still in the kindergarten stage. There is now no well defined system. Every man who has prunes to dry maps out his own course, and builds his evaporator after his own idea; his evaporator will, however, usually be a modification or a very close copy of one he has seen or read about; consequently, there are about as many styles of evaporators as there are prune growers. Hot air and steam each have their advocates, and the results are very variable.

ACREAGE.—It is difficult to estimate the exact acreage planted to prunes in Washington, but it may be safely placed in the neighborhood of 25,000 acres. These are about equally divided between

the country east and the country west of the Cascade mountains. The varieties planted are Italian, French and Silver, in about the following proportions: Italian, 20,000 acres; French, 4000 acres; Silver, 1000 acres. There are a few acres each of Pond (Hungarian), German, Golden and several others, but as these prunes have little commercial standing they cut but little figure in our prune industry.

Probably one-half of all the prunes grown in the State are shipped green, i. e., they are not dried, but are packed in a semi-ripe condition and sent to Eastern markets. The results of these green fruit shipments have of late been so unsatisfactory in monetary returns that there is a general feeling that something must be done to save this fast increasing crop, and to convert a larger proportion into the dried product.

In eastern Washington not more than half the acreage in prunes is yet in bearing, and the next four or five years will witness a vastly increased output of prunes. In western Washington the prune industry is further advanced, yet there is still a vast acreage just commencing to bear.

SOILS AND SITUATIONS.—Most authorities will agree that the plum (prune) thrives best on a deep, rich soil, not too light, but one that retains moisture well. As a matter of fact, most of our prune orchards are planted on soils widely varying from this. Some of the finest orchards in Clarke county are planted on soil somewhat thin and gravelly and with a gravel subsoil, insuring perfect drainage. Others, as those in the Yakima valley, are planted on light volcanic ash soils, which are usually of great depth, and with little or no moisture except that supplied by irrigation. Others, again, are planted on drift sand, as those in the Snake river valley, the soil being exceedingly light and from 20 to 40 feet deep. Still others are planted on rich black loam of unknown depth, as those in the Walla Walla valley. And still others are planted on the heavy basalt clay loams of the Palouse country. Very fine prune orchards may be seen under all these conditions. It may be said that a prune orchard will succeed under favorable conditions of climate, situation and culture, on any of these soils, but there are a few locations which it would be well to avoid, viz: boggy lands, or lands where water is near the surface, as are also narrow cold valleys, where the cold air is likely to pocket. Gentle elevations and rolling lands are better than flats, for there the air circulation will be better, and there will be less danger from severe winter and late spring frosts. On such lands the drainage will usually be good, insuring a thrifty tree.

MARKETING.—A fifty-pound prune box costs 13 cents at the

factory; to paper it ready for the fruit, $\frac{1}{2}$ cent; facing, grading, weighing, nailing and marketing, $2\frac{1}{2}$ cents; total, 16 cents. The better grades of prunes when boxed will usually bring one-half to a cent more on the market than sacked prunes of the same grade, so it would seem that boxing is the most profitable.

Great quantities of prunes are annually shipped in cotton sacks, which ought to weigh 100 pounds even; it is easier for the dealer to make sales when the sacks all weigh alike than when they run in uneven lots. Many Eastern buyers prefer to buy in sacks, it suits their purpose better; inferior grades are often bought in this shape and "processed." Processing consists of taking prunes, old or new, as the



Side of Steer No. 1. (See First Page.)



Quarters of Steer No. 3. (See First Page.)

case may be, and dipping them in a bath of glycerine and water, in the proportion of two pounds of glycerine to twenty gallons of water. After undergoing this process the prunes look glossy and new, and, after being boxed up, they often sell for two or three times their first cost.

It is the growing desire of our prune producers to box and brand all their goods. In this way a reputation for our prunes will be built up which will ultimately result in greater profit to the producer.

The Cherimoyer.

W. M. Sheldon writes to the Fruit World about the Anona cherimolia, which has been fruited in a small way in different places in California and seems to take kindly to the semi-tropic climate. It is a bushy tree, though by proper trimming it could be made a handsome shape, as its growth is constant, and though deciduous is practically evergreen, because the leaves are not compelled to drop until pushed off by the swelling of the future buds which are completely covered by them. Nearly all the trees have been grown from seed that originally came from Mexico or Central America, and are not like some other varieties of the same family that have the bud above the leaf.

This tree bears a delicious fruit, rough and scaly on the outside, but full of a rich custard, the taste of which is hard to describe, prized wherever grown. It generally weighs from one-half to three pounds, and, like a pear, can be picked a short time before it is ripe and laid away until it is mellow. It can be shipped quite a distance if picked at just the right time. When very ripe the skin gives out a peculiar musky odor that is unpleasant to some, but when the peel is removed this gives way to others far more attractive.

In frostless places, under the influence of the cool sea breeze or other conditions, some trees ripen their fruit in October, while others wait until March. When the end of a branch is pinched off, the buds underneath the leaves are matured; the leaves drop and the growth continues by side branches, so that it would be possible to change the direction of a branch any time of the year. The fruit buds are not covered, but the same treatment would probably tend to check the growth of wood and develop blossoms. When all the various helps and hindrances are known, the grower of the future should be able to put this fruit on the market at the most desirable time of the year. But few have paid much attention to the propagation of select varieties by budding or otherwise, so there is ample room for a few careful men to originate seedless or very choice fruit, and perhaps in time be able, by budding on the more hardy stock, to produce a tree that can be grown successfully in much colder climates than is possible at present. When planted where light frosts check the growth in winter, the tree adapts itself to the situation, blooms in spring and ripens its fruit in the late fall. It has many fine fibrous roots and seems to do best in a deep, loamy soil, where the roots can have a chance to penetrate freely.

If the people could only get a taste of the cherimoyer, there would be a demand for the fruit that could not be supplied.

THE DAIRY.

Holsteins in the San Joaquin.

By M. D. ESHLEMAN-SHERMAN in the Holstein-Friesian Register.

THE MINNEWAWA HERD.—The management of a fine herd of cows is of constantly increasing interest. When we turn over the records and glance at the successes and muse over the failures of the past, more fully do we realize the truth of the old dairy adage that the "sire is half the herd," but would add, in a grade herd, that the performance of his dam and grandam are, after all, the best references that the bull can give. The first Holstein bull we owned was Beauty Prince 9355. He proved to be a marked producer of good dairy cows. We had only two registered cows at that time and have often regretted that we had not our present herd for him to head. Three hundred and nineteen grades sired by him gave, under the Babcock test, the following results: The best three made, respectively, 462.75 pounds, 437.25 pounds and 432.25 pounds of butter a year; thirty-nine made between 400 and 425 pounds; forty-two between 375 and 400 pounds; twenty-nine between 350 and 375 pounds; nineteen between 325 and 350 pounds, and seventy-one between 300 and 325 pounds. The rest were culls and went to the butcher. Only one, however, fell below 200 pounds, and as the State average is less than that we may say that the blood told in even the poorest of them. When the dams of these cows were tested only nine reached 275 pounds under the most liberal feeding. We, however, should not expect more, for they were simply "cow," being red, white, roan, with a single black-and-white one for variety, that made up this scrub herd, picked up here and there in a county that had not a creamery within its borders.

CHOICE OF SIRES.—We were but beginners, follow-

ing the best advice we could find. We bred back the best of these grade cows to their sire, Beauty Prince, but it was a mistake, as not one of those inbred animals had vigor enough to assimilate food, and in four years not one remained in the herd, for they could not keep up the yearly average of 300 pounds of butter. Now, as our familiarity has increased with the breed, we look to see in the bull the special looks of his family, and when he shows it markedly he is apt to transmit their character; in other words, we wish to see him look like his best female ancestor, with the masculine head and swagger added.

Under the next two sires the herd held its own, but did not gain in either butter fat or milk. These were Graaf Aaggie Clothilde 22536 and Netherland Bena 22899. While these were fine animals, they did not nick kindly on our grade herd. We had now become so convinced of the value of the Holstein-Friesian blood on the alfalfa fields that we purchased forty-eight more registered cows and heifers. Some of the heifers were bred to Johanna 5th Paul DeKol 22372. Here we met with a disappointment, as they dropped bull calves. We were fortunate in our purchase of Nero of Valley Vista 22559 and Parthenea Sir Mechthilde 21847, as well as in Bijou Prince 21478, son of our best cow, Lady Kathleen 22913, and old Beauty Prince 9355. We have gained in the heifers from these bulls an increase of butter fat averaging four-tenths of 1%, or from 4% the herd has moved up to 4.4% without diminishing the milk flow. The present heads of the herd are: Ignaro DeKol 23538, out of Cascade Princess 42188, by Johanna 5th Paul DeKol 22372; Nero Blanco 25002, out of Lady Kathleen 22913, by Nero of Valley Vista 22559; Lady Kathleen Sir Mechthilde 25484, by Parthenea Sir Mechthilde 21847, and Lady Bonitas Prince 25485, by Bijou Prince, out of Lady Bonita 21813.

RECORDS.—The two cows, Lady Kathleen 22913 and Lady Bonita 21813, we have owned for nine years. Their last year's records were as follows: Lady Kathleen made 639 pounds of butter, her yearly average per cent of butter fat being 4.7. In January, 1897, three months after calving we tested her, with the following result: First week, 20 pounds 5 ounces; second week, 22 pounds 2 ounces; third week, 21 pounds 3 ounces; fourth week, 23 pounds. The health of this cow is wonderful, as she has never been off her feed since in the dairy. The cow Lady Bonita 21813 is a smaller animal, of less rugged constitution, than Lady Kathleen, more of the smooth type dear to the show ring. Her last year's record, which is her best one, falls short of the 600 pounds by 1 pound, as it stands at 599. In March when we tested she made the first week 18 pounds 2 ounces; second week, 19 pounds 1 ounce; third week, 18 pounds 4 ounces; fourth week, 18 pounds 6 ounces, with an average of 4.4% of butter fat yearly. The daughters of these two cows are promising to surpass their dams. Lady Kathleen's Minnewawa, with her second calf, last year made 536 pounds of butter. Lady Malaga 40117, Lady Bonita's daughter, last year, with her second calf, gave 9870 pounds of milk testing 4.8. Lady Sultana 48628, Lady Malaga's daughter, has been in milk a short time—is only two years old—and is giving 40 to 45 pounds daily of 4% milk. The heifers Drussa 43198, Fidessa 43105, Aralia 43106 and Wakalona 43107, all sired by Parthenea Sir Mechthilde 21847, are equally good heifers, but we will not multiply names and individual records further, but say that the entire herd shows a yearly average of 4% of butter fat and yearly production of 339 pounds of butter per cow. The registered herd has a yearly average of 4.4% of butter fat and a butter production of 386 pounds per head. When we think how easily we have raised these fine animals, and that as heifers they have returned us as much as the aged grades (we do not have to count two heifers as one cow in our records), the foolishness of waiting years to breed up from common cows, as a mere business proposition, is forcibly borne into our minds as one of the things that life is too short to indulge in. Better a few full bloods than a stable full of grades.

STYLE.—Our animals are of the dairy type, without being stunted in size or having to be starved to show dairy form. We are often amused to see the idea of people that if a cow is reduced to a frame that looks like a lath fence, and has the sunken eyes of a starved creature, she is a producer in the milk string. Really, a cow that has not sufficient vitality to keep herself fat, and to have her coat of hair bright and sleek, is not the cow we want for a profitable animal for a cow, like a horse, may be an easy keeper. Milk production, while wearing, is not more so than plowing on a brood mare; yet how quickly we discard the one that grows thin while the mate remains in good order. The same rule should apply to the cows.

FEEDING.—As a matter of profit, no dairyman can afford to cut the food supply so short that the cows run down in health, for he will find the loss comes back to him again in the weak calves, or that the cow next time she is fresh will have fallen off enough in milk to make the account even. The same thing is found when the herd is fed for the first time. The cows that respond the first are often the beef ones that soon drop out, while the dairy animal is stowing the fat inside on her ribs and making preparation in six months' time to be milkers. The demand for good cattle is increasing constantly. Where a few years

ago we had no local demand for our best cattle, we can now sell them to the dairymen around us at good living prices. In this wide San Joaquin valley a few years ago dairying was confined to a few herds, furnishing milk to the towns, as the best butter was brought from the coast. The second quality came from Kansas, with plenty of oleomargarine thrown in as cow butter, while the worst only was produced here, for the alfalfa taint was unbearable even when standing on the table. When this obstacle was overcome and good butter made, a local trade was built up at increased prices over the best coast butter. Then came the State Fair gold medal to our Holstein herd, on alfalfa hay and alfalfa silage, against the coast butter, making the highest score of the year, 98.34.

ALFALFA.—It was useless to try to say longer that alfalfa butter was not marketable, or that it could not be fed without danger to the cow, for the Holstein could and would give the highest returns from this feed. It was the old story of environment retold again. The creameries are springing up like mushrooms. Many of them are finding it hard to run while they are educating the patrons to the care of the cows. Others suffer from the long hauls, sending out wagons to gather up a few quarts of milk here and there on the scattered ranches, being rather expensive; yet the longer they run the easier it is for them to thrive. The people are reading, and after they have tried the various breeds are coming more and more to the Holstein, for they have the constitutional stamina, having been bred and cared for carefully for so many years that they are like civilized man, healthier than the savage, even under the strain of high production, and able to do well on the alfalfa that will always be an abundant feed.

SHEEP AND WOOL.

Goats as Land Clearers.

Col. W. L. Black of Texas, at the recent Live Stock Convention at Fort Worth, gave an interesting account of clearing land with goats. In one case, says Col. Black, there was not the smallest bush or a single weed on 600 acres of land that the owner assured me was a perfect thicket two years before he got goats, and to convince us of this fact he called our attention to his neighbor's adjoining field, which was positively so filled with brush that no grass whatever could grow on the land. When the doctor told us he had been trying for fifteen years to clear his land by the common method of cutting it down and ranging cattle and sheep on it, his great enthusiasm for the little animal was fully explained.

Goats thrive better on brush than on grass, and prefer a high and dry country to one that is low and damp. We have a great abundance of just such land as this in our Western Territories, largely represented by rocky, precipitous mountains, covered with all kinds of brush, and entirely worthless for either cattle or sheep raising, but a perfect paradise for the goat.

In addition to this, we have a great amount of brush in all of the older States that should be exterminated. According to our last census, about one-third of our tillable land was classed as "undeveloped," which I understand to mean is still in virgin forests, or in old fields that have grown up with brushy thickets. Many of our older farms in the Eastern and Southern States were abandoned years ago in consequence of the rapid development of richer lands in the West and in Texas. These lands are now so densely covered with briars and brush as to render them unfit for any purpose whatever.

I am told that it is not at all uncommon in Oregon to use goats in clearing even virgin forests. Nothing seems to be too big or too bitter in the shape of vegetation for a goat to tackle. If a tree is so high that the animal can not reach the leaves, all you have to do is to cut it down for firewood, and the goat will do the rest by eating up the sprouts as fast as they come up from the roots. In many portions of the world goats are used extensively for milking and cheese-making purposes, and are a source of profit in this respect. They are very prolific and long-lived, are subject to no disease and will live where a cow or sheep will die. They are just the kind of stock we should engage in raising upon an extensive scale, and I feel quite sure the day is not very distant when the United States will be able to supply her own wants in goat skins instead of paying out \$20,000,000 to \$25,000,000 a year to foreign countries for this product, which we are doing at the present time.

In testing drinking water for purity, if limo is suspected, put two drops of oxalic acid into a glassful of the water and blow on it. If it turns milky, lime is present. For lead evaporate by gentle heat a little of the water nearly to dryness in a clean porcelain cup; moisten the residue with acetic acid and add to a portion of it a few drops of strong hydrosulphuric acid; a black precipitate indicates lead. A few drops of common syrup added to water will cause it to turn green if it contain earthy matter. If iron be present a little prussiate of potash will cause the water to turn blue. These are only simple tests. In a case of importance, analysis by a competent chemist is necessary.

Agricultural Review.

ALAMEDA.

HAYING SEASON APPROACHING.—Livermore Herald, March 31: Under the influence of the warm weather of the past month the grain crops have made rapid advancement and a number of farmers will have mowers at work in their volunteer oats within the next week or ten days. Hay promises to be of good quality this year.

BUTTE.

HEMP MILL BURNED.—Dispatch from Gridley, March 30: The new hemp mill on the Rau ranch was totally destroyed by fire this forenoon. Much valuable machinery and a quantity of prepared fiber were burned. The property and ranch are owned by G. Rau of New York.

COLUSA.

DATE PALM FRUITING.—Colusa Sun, March 28: It has been thought impossible to have the date palm ripen in this climate, but the tree in the yard of the Colusa House has had this season ripe dates of fine flavor, and the fact that it is possible for the date palm not only to bear fruit but to ripen shows the character of the climate. It is not only semi-tropical, but it borders on the tropical, for it has been thought that, like the banana, it can only be ripened under the burning sun of the tropics. There is hardly a limit to the products of the Sacramento valley.

LAKE.

PROMISE OF ABUNDANT CROPS.—Lower Lake Bulletin, March 24: The promise of a year of unprecedented yield of products of vineyard, orchard and field is in convincing abundance on every hand. Never before has there been such luxuriant growth of grass in our valleys and upon the hill slopes. Rich, nutritious clover is more abundant than ever.

MONTEREY.

IRRIGATION A BOON.—Gonzales Tribune: In another week the farmers on the Gonzales ranch will have concluded the work of irrigating their adobe land. The early sown grain, which was irrigated first, is looking fine and every acre of irrigated land shows a decided improvement immediately after receiving the water. Those who are so fortunate as to have irrigated land are assured of an abundant harvest. We give below a list of the farmers who have land which has or is being irrigated from the Gonzales Water Company's ditch, and the approximate number of acres of barley: Lynn Bros. 250 acres, Harry Brockmann 250, John Hargens 200, J. T. Massengill 300, Ed Clark 200, Fred L. Widomann 125, M. Minetti 325, L. P. Smith 125, Beatty & Mulloy 125, Ross Mortensen 240, Silvio Francioni 100, John McEntee 50, Matt Williams (alfalfa) 300, total 2590 acres.

LOS ANGELES.

APRICOTS RIPENING.—Los Angeles Times: "Apricots at Palm Springs are ripe," said a traveling man last Friday. The fruit was not indeed ripe, but was colored and fully developed, lacking only the sweetening process. The advancement of fruits is remarkable. The fruits at Pomona are as large as pigeon eggs, and in one place can be seen the phenomenon of apricots nearly grown—and a full crop of them—without a leaf on the tree. How could the season be otherwise than early with the thermometer hanging around 60° and 90° all winter? It is pleasant to see that the deciduous and citrus fruit blooms are perfectly normal, and that nothing but a failure to get sufficient water can affect the summer's development of the fruit crops—nothing but a much-belated freeze.

ORANGE.

WALNUT BUSINESS.—Anaheim Gazette, March 29: The report of J. B. Neff, president of the Deciduous Fruit Association of Anaheim, shows that there were shipped 164,107 pounds of No. 1 soft shell walnuts, 13,994 pounds of No. 2 soft shell, 57,807 pounds of No. 1 Standards, and 3507 pounds of No. 2 Standards, making a total of 239,415 pounds, which were sold for \$19,873.17. The entire cost of selling was 4 1/2%, of which 4 1/2% was paid the Southern California Deciduous Fruit Exchange for their services and for Eastern brokerage. The cost of preparing nuts for market was \$4.13 per ton. We have paid the growers .0823 cents per pound for No. 1 soft shells; .0728 cents per pound for No. 1 hard shells, and 5 cents per pound for No. 2 nuts, with a further distribution to be made later, which will bring the price of No. 2 nuts within 2 cents of No. 1 nuts. The cost of the association has been only nominal, the total cost being 24 cents per ton. The sacks and twine are not an expense, as the nuts are sold at gross weight, and the price re-

ceived for the sacks is a little more than first cost. The walnuts were sold at prices ranging from \$8.15 to \$10.20 per 100 pounds for No. 1 soft shells, and \$7.65 to \$8.50 per 100 pounds for No. 1 hard shells, f. o. b. Anaheim. The extreme price on soft shells was obtained for a carload containing only No. 1 soft shells.

RIVERSIDE.

ORANGE SHIPMENTS.—Riverside Press, March 31: A total of 2420 cars of oranges of 362 boxes each, and 100 cars of lemons have been shipped from Riverside. Redlands has shipped 1041 cars of oranges and Covina 735. Southern California shipped 767 cars last week, making total shipments for the season 8610 cars. The Fruit World states that shipments for the past week were probably the heaviest ever sent from California. In spite of this, the Eastern market has not only been maintained, but has shown marked advance. Late sales show some very high averages. In spite of heavy shipments there has been no accumulation at any distributing point. Packers have been overloaded with orders at the advanced prices, and out of the large shipments made there is a smaller percentage of tramp cars than before at any time this season. It is doubtful if there are any cars of salable fruit en route that are unsold, or that would be unsold if they were offered f. o. b. This feature of the situation argues strongly for a firm market at auction centers next week, because all the receivers are interested in the receipts.

SAN BERNARDINO.

BEET PROSPECTS.—Chino Champion, March 30: Beets on the ranch are looking finely now. We have never seen a more perfect stand of beets on the ranch than at present where they are up. Of course, this is accounted for by the soil being unusually warm for this time of the year; and the seed has only been planted where there is plenty of moisture to not only germinate it, but to grow a crop.

SOLANO.

GROWERS SIGN CONTRACTS.—Dispatch from Suisun, March 31: Ninety-eight per cent of the fruit growers in upper Suisun valley, and all the orchardists in Groen valley, have signed contracts with the California Cured Fruit Association.

FRUIT OUTLOOK.—Suisun Republican, March 30: Some uneasiness was caused a short time ago by the dropping of the apricot buds. Now it is seen that the crop will have to be thinned considerably, as more than enough buds for a good crop of fruit still remain on the trees. The yield of almonds will not be so large as it was last year, but there is prospect for an average crop. All other kinds of fruit, except cherries, promise to yield abundantly. Cherry trees seem not to have recovered from the drouth of two years ago, but the indications now are that the crop will be larger than was anticipated.

SONOMA.

AFFECTED BY SOUR SAP.—Santa Rosa Republican, March 26: W. E. Woolsey states that the prune orchards in the vicinity of Healdsburg and Windsor are affected by sour sap, and large numbers of trees are dying. The trees of the county promise to yield large crops of prunes, but Mr. Woolsey thinks the ravages of sour sap will reduce the yield very considerably.

WILD STRAWBERRIES GATHERED.—Santa Rosa Republican, March 22: The first wild strawberries were gathered the past week. This would seem almost incredible to Easterners.

PACKERS SIGN THE CONTRACT.—Santa Rosa, March 26: Miller & Hotchkiss and the Merritt Fruit Co. both signed the packer contract with the California Cured Fruit Association here to-day, and the indications are that the necessary proportion of prune growers in this county will be secured for the project.

OLIVE OIL MILL.—Geyserville Gazette: The olive oil factory being erected at this place by Messrs. Morris and Smith bids fair to be a successful enterprise. These men have constructed an olive mill that clears the meat of the olive from the seed, throwing the seed to one side perfectly clean. The most remarkable feature about the machine is that it will clean the olive from the seed of the dried olives as readily as from the olives just gathered. Work in manufacturing olive oil will begin next week.

PROSPERITY PREDICTED.—Cloverdale Reveille, March 31: M. Fontana, the well known cannery man, predicts that the next fruit season will be one of the best in the history of California. On Sunday Mr. Fontana visited the Italian-Swiss colony at Asti. He stated that the vineyards are in fine condition and give promise of the biggest yield of grapes in the history of the colony. Mr. Fontana estimates that the wine product of the Stato this year will

reach 20,000,000 gallons, a big increase over last year's yield. He stated that the prevailing impression that the ravages of phylloxera are going to seriously reduce the wine product of the State is erroneous. A large acreage of new vineyards is being set out and that increase will more than make up for the losses from all sources.

STANISLAUS.

SPLENDID WHEAT.—Stockton Mail, March 21: D. Delaney has returned from a trip to Stanislaus county, and brought back some fine samples of wheat. It stood over 3 feet high and was headed out. There were 2000 acres in the piece, and Mr. Delaney says that he never saw finer looking wheat. It belongs to Gates Bros. and is situated nine miles west of Modesto.

WHEAT IN WAREHOUSES.—Modesto Herald, March 15: The assessor's office reports in the warehouses of this county on the first Monday of March, as shown by tax statements, no less than 40,550 tons of wheat, 771 tons of barely, 43 tons of rye and 11 tons of bran, a total of 41,375 tons. The wheat tonnage is more than double the average tonnage on hand at the date. Of the total, 27,000 tons is in the Grange Co's warehouses, 12,000 tons in H. & K.'s warehouses, and 2500 tons in the Simon Newman Co's warehouses, the balance here and there in small lots.

SUTTER.

APRICOTS DROPPING.—Yuba City Farmer, March 23: Complaints are coming in from the almond orchards of the dropping of the young fruit. No cause is ascribed but many are of the opinion that it is due to the feeble state of the trees induced by the two years of dry weather which preceded this season. This seems to be borne out by the fact that trees that had the benefit of irrigation last year are holding their fruit.

CARPET GRASS FOR BEES.—Bee men have about dispensed with the alfalfa feeding grounds for their bees since the "carpet" in the tules produces such fine white honey. The industry in this county has doubled during the last year and is constantly increasing.

REMEDY FOR POTATO SCAB.—A friend hands us the following, thinking it might be of use to the gardeners, to prevent scab on potatoes, a remedy that Mr. Cilley of Camptonville has successfully used for a number of years: Soak the seed in a wooden vessel, after being cut for planting, for two hours or more in ten gallons of water in which two ounces of corrosive sublimate has been added. Dissolve the corrosive sublimate in warm water and then add to the ten gallons of water. If more of the solution is wanted add one ounce of sublimate to each five gallons of water. After the seed has been immersed two hours at least, spread them in the sun on a board floor covered with sulphur, stirring them with a rake until all parts of the seed are covered. When thoroughly dry plant.

TULARE.

HEAVY FRUIT YIELD.—Dispatch from Visalia, March 31: The Horticultural Commissioners, after a thorough inspection of the orchards of Tulare county, report that the promised yield this year is very heavy. At least half will have to be shaken from the limbs in order to save the trees from destruction. It is estimated that 2000 tons of apricots will be harvested.

BELGIAN HARE ASSOCIATION.—Tulare Register, March 23: A meeting was held for the purpose of forming a Belgian hare association. Every portion of Tulare county was represented and, after the adoption of constitution and by-laws, officers were elected as follows: W. A. Ward, president; Mrs. Fothergill of Tulare, vice-president; H. A. Charters, secretary; J. W. Elder, treasurer, and Dr. O. C. Higgins, R. J. Kirk and L. L. Brown, directors.

LAKE LANDS.—Visalia Times: Owners of Tulare lake lands were cautious in the early part of the season about seeding to grain, the season having started out as though we were to enjoy an extremely wet winter, with a probability of floods that would again fill Tulare lake with water. The month of January proving dry, confidence was restored, and farmers put teams to plowing lands that only a year or two ago were covered with a foot or two of water, and are only now getting through with seeding. A large area of these lands is now seeded to grain, and as the soil is productive enough at all times to keep growing grain in a thriving condition, little doubt exists that good crops will be grown there.

YOLO.

HAY BALERS' ASSOCIATION.—Woodland Mail: The Hay Balers' Association of Yolo county met, elected officers and fixed the following prices for the pressing of hay for the season of 1900: Pressed hay per ton, everything furnished, \$1; press-

ing and baler furnish wire, \$1.45; pressing and baler furnish wire and board, \$1.70. The following officers were elected for the coming year: Wm. Masters, president; C. Robinson, vice-president; F. Ferguson, treasurer; C. Dodge, secretary.

FAVORABLE PROSPECTS REPORTED.—The prospects are favorable for a tremendous crop of summer-fallow and winter-sown wheat. A large number of teams are now employed trying to plow under the vegetation for next year's summer-fallow, but it is a large contract on account of being so vigorous and thrifty. Some of the ground will have to be turned over several times. There is a fine stand of grain in the vicinity of Madison. If we do not have heavy frosts Yolo county will have the heaviest fruit crop in her history. Several around Madison, Esparto and Capay are planting vineyards. John Helin, of Madison, who put out 120,000 cuttings, informs us that there is an active demand for them. His are principally Zinfandel and Seedless. J. C. Tadlock has put out 10 acres; I. R. Lorranger, 10; Dr. Craig, 15; Eugene Merritt, 20; Mr. Curry at Esparto, 10; Charles Simpson, Guinda, 20; James Bland, 15, and George Scott, 6 acres.

HORTICULTURAL COMMISSIONERS' REPORT.—Winters Express, March 30: At the meeting of the Board, Commissioners Campbell and Anderson reported having inspected a number of orchards and vineyards. In a few orchards they found scale and red spider, but not to any serious extent. In every instance where ladybugs have been put out in orchards they have been very effective in destroying the red spider. The ladybug is a more effective remedy than spraying. The commissioners also found phylloxera in a few vineyards. They insisted that in all cases the infected vines be dug out and resistant vines substituted, and vineyardists have in no case refused to comply with the demand.

YUBA.

SHEEP MEN JUBILANT.—Marysville Appeal: Sheep men are in fine fettle this season. The weather has been very propitious for young lambs, the losses being hardly noticeable. Thos. Brady and Michael Keenan state that the increase this year will run from 96% to 100%. Wool is high, mutton ditto, and under existing conditions the flockmasters are for once "on velvet" beyond doubt.

OREGON.

CREAMERY COMPANY ORGANIZED.—Oregon Agriculturist, April 1: The Roseburg Creamery Co. has been organized at Roseburg by T. R. Sheridan, Chas. H. Fisher, S. C. Flint, B. W. Strong and F. W. Woolley. The capital stock is \$3000.

NORTHWEST CURED FRUIT ASSOCIATION.—The work of the Cured Fruit Association of the Pacific Northwest is progressing favorably. Provisions have been made for the organization of subordinate associations. The by-laws of the association have been revised and made to conform with the laws of the State. Blank contracts for growers are now ready, and the work of securing signatures will be commenced. A meeting of prune growers was held at Springbrook a few days ago, at which practically all present declared themselves in favor of joining the association.

OFFICERS ELECTED.—Pacific Farmer, March 28: The new officers of the Women's Flax Fiber Association are: President, Mrs. H. L. Pittock; first vice-president, Mrs. Rosa F. Burrell; second vice-president, Mrs. L. W. Stitton; secretary, Mrs. O. Summers; treasurer, Mrs. D. H. Stearn.

ANGORA RECORD ASSOCIATION.—The National Angora Goat Record Association has filed articles of incorporation. The association proposes to engage in the maintenance and publication of a record of Angora goats. The principal office will be located in Salem. The capital stock is fixed at \$500, divided into fifty shares of the par value of \$10 each. J. B. Stump, J. B. Early and Henry B. Thielsen are the incorporators.

Horse Owners! Use GOMBAULT'S



Caustic Balsam

A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

Can You Answer.

Can you put the spider's web back in its place
That once has been swept away?
Can you put the apple again on the bough
Which fell at your feet to-day?
Can you put the lily-cup back on the stem,
And cause it to live and grow?
Can you mend the butterfly's broken wing
That you crushed with a baby blow?
Can you put the bloom again on the grape,
Or the grape again on the vine?
Can you put the dewdrops back on the flowers
And make them sparkle and shine?
Can you put the petals back on the rose,
If you could would it smell as sweet?
Can you put the flour again in the husk
And show me the ripened wheat?
Can you put the kernel back in the nut,
Or the broken egg in the shell?
Can you put the honey back in its comb
And cover with wax each cell?
Can you put the perfume back in the vase
When once it has sped away?
Can you put the cornstalk back on the corn,
Or the down on the catkin—say?
You think that my questions are trifling,
dear?
Let me ask you another one—
Can a hasty word be ever unsaid,
Or an unkind deed undone?

—Estray.

Bide Your Time.

When fortune treats you slightly
And everything goes wrong,
Remember that you are still free
To labor and be strong.
To him who bravely does his part
Misfortune is no crime,
Just hold your grip and keep up heart
And learn to bide your time.
The surest road to greatness lies
Through hard and patient work,
The glorious name that never dies
Comes not unto the shirk.
Fame sits upon an eminence,
A pinnacle sublime.
He who would win must seek her thence,
Strive on and bide his time.
The man of hope and energy,
Who keeps one goal in sight,
Who goes his way with constancy,
Will some time win the fight.
The man whose life a glory lends
To every age and clime,
Is he whose purpose never bends,
Who works and bides his time.

Her Proposal.

The late March snows are dissolving
the delicate wreaths over the hills—the
maple buds are already swelling the
sky like crimson dots, and the song of
the blue bird heralded the advent of
spring over the bleak Berkshire hills.
"O, Billy, isn't it nice?" said little
Rebekah Hale as she skipped along the
road. "O, look, there's a dear little
striped squirrel, with a bushy tail and
such bright eyes, like black beads. O,
don't you wish we lived out doors al-
ways?"
"Becky, don't jump about so," chided
the boy, an ancient philosopher of ten
years or so. "There, I knew it. You've
burst out that hole in your shoe that I
sewed up carefully and one of your mit-
tens is gone."
"But it isn't cold."
"No, but that's no sign that we never
shall have any cold weather again. Be-
sides Aunt Keziah is dead."
"Well, I don't care for that," said the
little one recklessly. Aunt Keziah was
old and cross, and boxed our ears, and
said we were the plagues of her life."
"Yes," said Billy, slowly, "but there
is no one to take care of us now that
Aunt Keziah is dead. You should con-
sider that Becky."
"No one to take care of us," echoed
Becky, standing still. "O, Billy, I
didn't think of that."
Mrs. Harwood was frying doughnuts
over the great cooking stove in the
back kitchen. An immense blue and
white checked apron enshrouded her

spare form and a pocket handkerchief
concealed her hair. Mrs. Harwood was
not pretty at her best, and in this im-
promptu uniform she was simply hid-
eous.

"Seventeen — eighteen — nineteen,"
said Mrs. Harwood, fishing the brown
curls of paste out of the boiling liquid.
"Twenty and four makes two dozen.
Now, Michael, who is it, and what do
they want?"

"It's the two children from Aunt
Keziah Proudfoot's," said Michael Har-
wood, a tall, thin-faced man of thirty
or thereabouts. "The old woman died
last night."

"Well, what of that?" said Mrs.
Harwood, who had gone back to the
table and was cutting long strips of
dough, and twisting them into spirals,
ready for the pot of frizzling lard.
"They'll bury her, I suppose. And af-
ter her long sickness, the dear knows,
nobody will be very sorry."

"But the little children? What is
to become of them," said Michael,
softly.

"Why, send 'em to the poorhouse, of
course. There's nothing else to be
done, as I know of," snapped the dame.

"To the poorhouse, Maria? Those
pretty, delicate little children—Kate
Hale's brother's children—to the poor-
house!"

"Well I don't see why not," said
Mrs. Harwood. "Thirty-four, thirty-
five. Three dozen ought to be enough.
If Kate had cared so much about her
relations, she might a stayed to hum
and looked after 'em, instead of running
away with a ship's captain and going
to China or India, or Kamschatka, or
the Lord knows where. After she was
engaged to you too! And—"

"Never mind about that now, Maria,"
said the brother, with a slight elevation
of his eyebrows. "It is all a thing of
the past; and Kate could not foresee,
when she left her native country, that
her brother's little ones would soon be
alone in the world, orphaned and with-
out resources. So it has chanced, at all
events. The poor little things are in
the sitting room now."

"And I s'pose they've come here be-
cause my husband is poor master,"
said Mrs. Harwood, dropping in her
fresh batch of doughnuts, one by one.
"Well he won't be home afore noon."

"I was not thinking of that, Maria,"
said Michael Harwood, gently. "It oc-
curred to me, that, perhaps, since you
had no children of your own—"

"That I'd fill my house with all the
pauper children of the neighborhood,"
said Mrs. Harwood. "No, Michael
Harwood, you're mistaken there. I
wouldn't have Jim Hale's young ones
in my house after the way Kate treated
you, not if I was to be paid a dollar a
day. And besides, I ain't matron of
the poorhouse."

"Then, what are they to do?"

Mrs. Harwood shrugged her bony
shoulders.

"It's no buisness of mine," she said,
indifferently. "Nor I ain't going to
concern myself in it."

Michael Harwood went back to the
room where the two little orphans were
admiring a stuffed parrot, that swung
from the ceiling.

"Children," said he, get on your
hungry! We didn't have any break-
fast this morning!"

"Please, Mr. Harwood," said Billy,
"where are we to go? Nobody wants
us!"

"I want you," said Michael Har-
wood, his heart giving a great jump as
he saw Kate's old look shining out of
the wistful, upturned face of the child.
"You shall be my little ones hencefor-
ward."

There was no lack of talk and gossip
in the neighborhood when Michael Har-
wood left his brother's house and set up
housekeeping for himself in a little un-
occupied cabin just on the verge of the
woods with the Hale children as pro-
teges and companions.

Michael Harwood was an artist by
profession—one of those erratic, irreg-
ular geniuses who seldom make much
money, yet possess nature's genuine
gold. He paid little attention to the
buzz of the neighbors, the sarcasms of
his sister-in-law, and the criticisms of
the world in general, but painted ser-
enely on, disposing of his pictures at

ludicrously small prices as fast as they
were laid off his easel.

"For it isn't as if I could wait for a
good chance," said he. "They must
sell at any figure; the little people can't
starve."

So the three led a strange eccentric
life. Little Becky swept and dusted,
and did what she could. Billy brought
water, weeded the onion beds and made
himself generally useful, and Michael
Harwood did all the rest. When there
chanced to be meat enough for three
he ate and was thankful. When there
was not he made his meal of vegetables
and told the children it was for his
health's sake.

"Don't you love Uncle Michael,
Becky?" asked the little boy one night
when Michael had tucked them safely
up in bed and heard their simple prayer.

"Yes," said Becky, rearing up in her
little patch-covered nest. "And when
I grow up I mean to marry him."

"God bless the little ones," he mur-
mured. "And God bless Kate, where-
ever she may be."

Kate was nearer than he thought.

"Have you heard the news?" said
the Widow Castleberry to Mrs. Har-
wood. "Kate Hale's come back."

"Humph!" was Mrs. Harwood's com-
ment. "A bad penny always returns.
Who does she suppose is going to run
after her now?"

"Ah, but," said Widow Castleberry,
wagging her head, "you didn't hear
me through. She's a widow and she's
as rich as Croesus."

"No!" said Mrs. Harwood. "It ain't
possible!"

"But it is, though," said the widow.
"Wears diamonds as big as dewdrops
and a black silk dress as will stand
alone for richness and has her maid as
genteel as queen of the Cannibal is-
lands."

"Ah, dear, dear," said Mrs. Har-
wood. "Wonders will never cease.
Them children will be brought up like
a prince and princess now, I suppose!
I most wish I had taken them myself,
as Michael wanted me to do."

For once the tongue of rumor was
correct. Kate Hale, now Mrs. Alden
Armitage, had been, in very truth, left
a wealthy widow and she had returned
to her native land to adopt her brother's
orphaned children. Kate had been
pretty as a girl—as a woman, set off
by the accession of wealth, she was
royally beautiful. Nor was she devoid
of feeling. When she first came into
the presence of the artist, whose mag-
nanimity had saved her brother's chil-
dren from the poorhouse, she knelt
down and kissed his brown hands with
tears.

"Kate! Kate!" he cried, recoiling,
"what are you doing?"

"I can't help it," sobbed Kate.
"You are so kind, so noble. What
would my poor little ones have done but
for you? And when I remember how I
treated you—"

"We won't recall that, Kate," said
the artist quietly. "But I have grown
to love the little ones dearly. I do not
wish to part with them, although I feel
that you have the best right to them."

He was standing with one hand on
Becky's golden head. The child glanced
eagerly from one to the other.

"Couldn't Aunt Kate come and live
with us, Uncle Michael?" said she, with
a sudden brightening up of every fea-
ture. The eyes of the elders met—
Michael's sad and kindly—Kate's full
of sudden tears.

"Ah, my child," said the former. "I
asked her that question once, a long
while ago—and she said 'No.'"

"But if you were to ask me again I
should answer very differently," cried
out Kate.

And then she hid her burning face
in her hands.

"I shall never ask it again," said
Michael Harwood, gravely.

"Then I will," said Mrs. Armitage,
going up to him and putting her hands
in his. "Dear Michael, I have learned
now the priceless value of what I once
rejected—your true, noble heart, I love
you—will you repulse me now?"

"I was going to marry Uncle Michael
myself," said Becky, thoughtfully.

"But maybe it's best that Aunt Kate
should have him, after all."

"I think so," said Billy.

Indigestible Fried Food.

No one who has taken the trouble to
scan the average bill of fare can fail to
recognize the importance of the frying
pan, states a writer in the Philadelphia
Medical Record. Fried ham or bacon
and eggs, fried oysters, fried potatoes,
fried steaks, and so on, ad nauseam,
seem to be staple articles of food, par-
ticularly in the city restaurants, in
which so many business and professional
men get their noonday luncheons.

The cause of this is probably mainly
hurry; the costumer wants something
hot and fresh immediately, and the res-
taurant keeper can supply this demand
with less expense in time, trouble and
fuel by serving fried meats and potatoes
than by serving the more wholesome
broiled or baked foods; the result is the
development of an abnormal, depraved
appetite and a ruined digestion for a
lamentably large number of people.

It is not difficult to understand why
fried foods are so indigestible if we
take the trouble to study the physiology
of digestion. The proteids which are
the chief nutritive constituents of
meat, oysters, fish and eggs, in order to
be digested and assimilated must be ac-
ted upon by the gastric or pancreatic
juices, and before this can take place
the layer of fat which has covered and
permeated the morsel in frying must be
removed. This is accomplished by the
process of emulsification, which means
the expenditure of a large amount of
digestive energy.

The butter applied to broiled meats is
far less pernicious, for not only is but-
ter the most easily emulsified of the fats,
but it is not soaked in by gradual heat-
ing, as is the case with most fried foods.
The condition of the fried, starchy foods
like potatoes is very similar, for an
order that the starch may be changed
into assimilable grape sugar it must be
acted upon by the amylase of the
pancreatic juice.

What can be done to lessen the fried
food nuisance? Perhaps nothing so long
as the present conditions exist; so long
as the highest ideal of the people is to
accumulate dollars rather than to de-
velop and preserve healthy bodies which
shall be the servants of healthy minds.
Yet if those who teach physiology in
schools understand their subject and its
practical applications as they should;
if there were more schools in which
wholesome economical cookery were
taught as it should be; if physicians
took every opportunity to impress such
facts of practical hygienic importance,
as they should, there can be no doubt

Young Girls

How easy it is for young
girls to go into the "decline."
They eat less and less, become
paler and paler and can
hardly drag through the day.
They are on the steady down-
ward course. Iron does them
no good; strychnine and bit-
ters all fail. They need a food
that will nourish them better,
and a medicine that will cor-
rect their disease.

Scott's Emulsion

is both of these, elegantly and per-
manently combined. The Cod-Liver
Oil makes the blood richer, and
this gives better color to the face.
The hypophosphites of lime and
soda act as a strong tonic to the
nerves. Soon the weight increases,
the digestion improves and health
returns.

At all druggists; 50c. and \$1.00.
SCOTT & BOWNE, Chemists, New York.

that by some sensible and well-informed people the fried abominations would be avoided.

Caring for the Baby.

Young mothers know very little about the care of babies, and this is apt to make the task seem a very difficult one, states a writer in the Boston Budget. Let his clothes be soft, warm and comfortable. We often fail to realize how much more sensitive he is to changes of temperature than we are, and are not careful enough to guard against them. The room in which he stays should be kept as near the same temperature as possible, and well ventilated, but avoid keeping him in a draught, or he will be apt to have the colic. A healthy baby that has not formed bad habits will be happy and contented in his crib the greater part of the time, allowing his mother to attend to other duties or to rest. He does not need to be held in your arms all the time, and he never needs to be carried about to amuse him. Few mothers are strong enough for that task, and they should never begin it.

A great deal of worry and many cross spells might be saved if the mother would begin by having regular hours for feeding and bathing the baby. The bath should never be neglected, for so much of his comfort depends upon it that he will be restless and cross without it. Have the room warm and the water just warm enough for comfort. Get the bath tub in place with towels and clean clothes hung on a chair before the fire so they will be at hand when needed. Bathe him quickly and wipe him dry with a very soft linen towel. Dust him under the arms or any other places that seem in danger of chafing, with a powder composed of ten parts talcum and one part boracic acid, thoroughly mixed by sifting together two or three times. This is very soothing and healing, and when prepared at home it is inexpensive and one can be sure to have it pure. Slip his clothes on and fasten them with as little turning and twisting as possible, and if he is not hungry he will usually fall into a quiet, refreshing sleep.

When babies are teething they need special care to keep them well. They should have plenty of simple and nutritious food that is easily digested. The gums become swollen and the mouth feverish. Give them a drink of water occasionally and see how eagerly they take it. Any tendency toward diarrhoea should be checked at once. If home remedies fail, call a physician without delay. So much depends upon acting promptly in this disease.

How to Get Health.

Dr. Frank H. Hamilton summed up the art of getting health and keeping it, as follows: "(1) The best thing for the inside of a man is the outside of a horse. (2) Blessed is he who invented sleep, but thrice blessed the man who will invent a cure for thinking. (3) Light gives a bronzed or tan color to the skin, but where it uproots the lily, it plants the rose. (4) The lives of most men are in their own hands, and, as a rule, the just verdict after death would be suicide. (5) Health must be earned; it can seldom be bought. (6) A change of air is less valuable than a change of scene. The air is changed every time the wind is changed. (7) Mould and decaying vegetables in a cellar weave shrouds for the upper chambers. (8) Dirt, debauchery, disease and death are successive links in the same chain. (9) Calisthenics may be very genteel and romping very ungenteel, but one is the shadow, the other the substance of healthful exercise. (10) Girls need health as much as, nay, more than, boys. They can obtain it as boys do, by running, tumbling, by all sorts of innocent vagrancy. At least once a day girls should have their halters taken off, the bars let down, and be turned loose like young colts."

SIMPLICITY is making the journey of this life with just baggage enough.—Charles Dudley Warner.

Characteristics of Philadelphia Women.

Every portion of our great country has its individual characteristics, and the women of each section have their peculiar charm, native to themselves, and dissimilar to that of their neighbors. Take Philadelphia as an example. New York and Philadelphia are not many hours apart, yet the women of the two cities are in many ways altogether different. The fair Philadelphian is much the more conservative of the two; she is the less ready to adopt a novel fad, less hospitable to improved theories, and even in her housewifery she is more staid and old-fashioned than her sister who dwells under heaven-aspiring roofs and sees the Statue of Liberty every day. The New York woman contentedly packs and squeezes her family and her goods into a narrow flat; the Philadelphian lives in a stately and ample house with a spacious back building attached, and her home has front and back stairways, and beautifully appointed chambers for guests. She goes to market herself, and her servant behind her carries a basket in which to bring home her provisions; her table is always sufficiently spread to allow for an extra plate and cup. Most gracious and kindly is her welcome to the stranger within her gates, while in her courteous and exclusive inner circles the persons presenting proper credentials is made free to the best with a charming and intimate cordiality, and a hospitality which knows no bounds. Philadelphians are solid folk, caring less for mere show and more for reality than do people of some more pretentious cities; and their town, their women, and their style of living retain certain conspicuous American virtues, among which honesty, frugality and friendliness stand in the foremost rank.—Margaret E. Sangster in Collier's Weekly.

Own Your Home.

One of the safeguards of this country is that so many people own the houses they live in. It is people who own nothing themselves who advocate universal smashup. They want every thing to go to pieces so they can pick up some of the wreck. By so much as men own property do they become conservative. In our country becoming a freeholder is often a step toward virtuous citizenship. My counsel is to all young married persons to plan for the purchase of a home as soon as that be practicable. Toil for that though you toil for twenty years. What you have been flinging away in frivolity, put into a homestead. The attempt to secure a home has saved many young people for both worlds. It leads them into a sobriety and practicality which helps one's morals, as well as his finances. Do not make the mistake of so many that you must wait until you get a great home. Many people in the early part of their life have had more happiness in a house with four rooms than they have in later life had in the house they built with twenty rooms. Luxuriant table cannot give appetite, nor embroidered canopy produce sleep, nor imperial divan yield quiet. It does not so much depend upon the style of house as upon the disposition you take into it. The house in which the peace of God reigns is well furnished. A cradle on one side the house, and grandfather's arm-chair on the other side the house, an altar between, and the house is well balanced.—T. De Witt Talmage.

"On, MY FRIENDS, there are some spectacles that one never forgets!" said a lecturer, after giving a graphic description of a terrible accident he had witnessed.

"I'd like to know where they sell 'em," remarked an absent-minded old lady in the audience.—Collier's Weekly.

WE wish it were possible to imbue every man, but especially every young man, with the desire of having a home of his own—a home to be adhered to through life. Next to the home itself,

an earnest, overruling desire for one would be a great blessing. A man who owns the roof which shelters him and the soil from which he draws his subsistence—and few acres are requisite for that—need not envy any nabob's great fortune.—Horace Greeley.

It is noted that of thirty-four great battles, twelve were fought on Sunday, six on Thursday, five on Wednesday, two on Friday, while Monday, Tuesday and Saturday claim three apiece. Among the Sunday battles were Waterloo, Inkerman and the fall of Delhi; Gravelotte and Omdurman happened on Thursday; Tel-el-Kebir, the battle of Alma and Balaklava came on Wednesday; Trafalgar was won on Tuesday, Sebastopol on Friday, and the battles of Marengo and Abu Klea were fought on Saturday.

By different nations every day in the week is set apart for public worship—Sunday by the Christians, Monday by the Greeks, Tuesday by the Persians, Wednesday by the Assyrians, Thursday by the Egyptians, Friday by the Turks and Saturday by the Jews.

SIXTEEN windows in the dome of the new capitol of Colorado, at Denver, are to have portraits of leading citizens of the State, and the women have suddenly sprung a demand upon the managers that their sex shall be represented in at least five of them.

THE little ills of life are the hardest to bear, as we all very well know.—Thackeray.

DOMESTIC ECONOMY.

Domestic Hints.

LEMON CANDY.—Take three cups of granulated sugar and two large wine-glasses of water. Stir this well before putting it on the fire—do not stir afterwards. Let it boil fifteen minutes, take it off and add a teaspoonful of extract of lemon. Pour the syrup out to cool and pull as soon as it is cool enough to handle.

SALADE AMATEUR.—Take two parts of freshly boiled potatoes, and before they are cold cut into dice; sprinkle with one teaspoonful of salt and two teaspoonfuls of oil. Add one part of broken walnut meats and one part of chopped white celery leaves and squeeze over all the juice of a lemon. Don't use a mayonnaise, the nuts supply a sufficient richness.

CELERY WITH TOMATO SAUCE.—Cut the celery into inch pieces and cook in boiling water until tender. Drain in a colander. For three cups stewed celery make a sauce with a pint of stewed or canned tomatoes, heated to boiling and thickened with a tablespoon of flour rubbed smooth in a little cold water. Add one-half cup hot cream or milk, season to taste, pour over the celery and serve.

DUTCH APPLE PIE.—A good biscuit crust, rolled rather thin, is used to line a deep pie tin or a shallow pudding dish. Fill in with nice, tart, easy cooking apples that have been pared, cored and cut in eighths. Set these in close, pointed ends down; sprinkle with sugar, spice and a little flour; put some bits of butter in the apertures among the apples and add a little water. Bake till the apples are done and eat warm.

CAULIFLOWER WITH CHEESE.—Trim off the outer leaves and soak, head downward, in salted water. Place in a saucepan, head up, covering with boiling salted water, and boil gently but steadily until tender when tested with a fork, then drain. Break off the branches and put in layers in a baking dish with salt, pepper and grated Swiss or American cheese. Pour over all about a pint of white sauce, cover with a thick layer of buttered bread crumbs and place in a hot oven until browned.

CONSUME WITH RICE.—Thoroughly wash and drain a pint and a half of rice; put it in a saucepan, with a quart of beef broth, two cupfuls of tomato sauce and a little salt. Mix, boil, cover tightly

and cook for twenty minutes; add six ounces of clarified butter, boiling hot; stir quickly and vigorously with a wooden spoon until thoroughly mixed. Cover the dish tightly, putting a cloth inside of the cover, so as to keep in the steam. It will absorb the butter, and become light and creamy. Turn the rice into a round, deep dish, and send to the table with two quarts of beef broth in a soup tureen and a plate of grated parmesan cheese.

APPLE GELATINE CREAM.—Wash, quarter and stew enough tart apples to make a pint of juice, add a little stick cinnamon to the water, and when soft drip through cheese cloth. Soften one-third of a box of gelatine in half a cupful of cold water; bring the fruit juice to a boil, add three-fourths of a cupful of sugar and the gelatine, stir until dissolved and pour into a deep bowl set in ice. When the jelly begins to stiffen, beat with an egg whip until light and stiff enough to drop; add a pint of cream whipped to a stiff froth and sweetened, fold together until smooth, place in a mould and set in a refrigerator for four or more hours. Serve with strawberry preserves and lady fingers.

OYSTER SHORTCAKE.—To make oyster shortcake mix two cupfuls of sifted flour with three level teaspoonfuls of baking power, one level teaspoonful of salt, three-quarters of a cupful of milk and three tablespoonfuls of butter. Make into a soft dough and bake in two layer cake tins. For the filling put two tablespoonfuls of butter, a small piece of bayleaf, three cloves and one slice of carrot into a saucepan and simmer slowly. Add two tablespoonfuls of flour and cook for three minutes without browning. Add one and one-half cupfuls of milk, salt, pepper and a dash of nutmeg and cook until thick. Cut each oyster of one quart of oysters into three or four pieces and add to the sauce. Cook two minutes. Remove from the fire and add the yolk of one egg. Remove to the stove for one minute. Put the mixture between the shortcakes and serve hot.

To hang portieres in narrow apartment halls or in any place where it is desirable to have them at times out of the way, the long wooden arms moved on brackets will be the most convenient fixtures. In this way the portiere may be laid back flat against the wall if desired. This arrangement is useful in the basement hall. Here it is sometimes necessary to have the light from the area door, and at other times it is desirable to shut off a kitchen or refrigerator view while passing to the dining room beyond.

The old-fashioned plan, using orange peel to facilitate the lighting of a fire is not to be despised. The peel should be collected and dried on the rack over the kitchen stove, and when cool should be put into a tin to keep dry. When laying the fire some pieces of peel should be placed on the sticks before the coals are put on; as soon as the peel is ignited it will flare up and help to make the fire burn.

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COE'S ECZEMA CURE \$1 at druggists. 25c box of us. Coe Chem. Co., Cleveland, O.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, April 4, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	65½@67	—@—
Thursday.....	67¼@68½	—@—
Friday.....	66½@67½	—@—
Saturday.....	67¼@68½	—@—
Monday.....	67½@68½	—@—
Tuesday.....	*—@—	—@—

*Holiday.

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday.....	5s 9¼d	5s 8¼d
Thursday.....	5s 9¼d	5s 9¼d
Friday.....	5s 9¼d	5s 9¼d
Saturday.....	5s 10¼d	5s 9¼d
Monday.....	5s 10 d	5s 9¼d
Tuesday.....	5s 10 d	5s 9¼d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	98½@ 98½	1 05½@1 05½
Friday.....	98½@ 98½	1 05½@1 05½
Saturday.....	98½@ 98½	—@—
Monday.....	98 @ 98½	1 04½@1 05½
Tuesday.....	98 @ 97½	1 05½@1 04½
Wednesday.....	98 @ —	1 05½@—

WHEAT.

The local market for spot wheat has not developed material change since last review. The scarcity of ships and high ocean freight rates continue to prevent any free outward movement of wheat from this port or from this coast. No great relief in this respect is looked for during the next few months. Sixteen wheat cargoes were cleared from San Francisco in March, being the same number as in February, although the aggregate quantity of wheat shipped last month—48,500 tons—was 1600 tons less than for preceding month. As there are only thirteen ships now on the engaged list for wheat, and only two disengaged vessels in port, the prospects are the exports of this cereal will show a decrease the current month. Two wheat cargoes have cleared thus far in April.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 98½@97½c.
December, 1900, delivery, \$1.04½@1.05½.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at 98@—c; December, 1900, \$1.05½.

California Milling.....	97½@1 03½
Cal. No. 1 shipping, alongside.....	96¼@ 98½
Oregon Valley.....	95 @1 00
Walla Walla Blue Stem.....	95 @1 02½
Walla Walla Club.....	85 @1 00
Off qualities wheat.....	82¼@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	6s6d@6s6½d	—s-d@—s-d
Freight rates.....	22¼@—s	40@—s
Local market.....	\$1 08¼@1 11¼	96¼@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on April 1st and Mar. 1st:

Tons—	April 1st.	Mar. 1st.
Wheat.....	*159,077	177,110
Barley.....	†46,749	49,653
Oats.....	5,486	5,686
Corn.....	92	185

*Including 103,159 tons at Port Costa, 54,667 tons at Stockton.

†Including 18,222 tons at Port Costa, 17,331 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 18,033 tons for the month of March. A year ago there were 86,896 tons wheat in Call Board warehouses.

FLOUR.

In quotable rates there have been no fluctuations for several months, but there has been more or less cutting in prices to effect transfers of noteworthy importance. Superfines are for the time being in light stock and market for same is rather firm at the current rates. There is no scarcity of what are termed extras or high grade flour.

Superfine, lower grades.....	\$3 40@2 60
Superfine, good to choice.....	2 65@2 90
Country grades, extras.....	3 00@3 25
Choice and extra choice.....	3 35@3 60
Fancy brands, jobbing.....	3 60@3 75
Oregon, Bakers' extra.....	3 00@3 40
Walla Walla, Bakers' extra.....	3 00@3 40

BARLEY.

Offerings and spot supplies of this cereal are not what can be termed heavy, and it is the exception where any selling pressure of consequence is being exerted, especially on desirable qualities, but the demand is not brisk, so little is required to fill immediate wants, despite the fact that prices are decidedly reasonable. Although market is slow at current rates, there is nothing at the moment to warrant anticipating materially lower values in the near future.

Feed, No. 1 to choice.....	72¼@ 75
Feed, fair to good.....	67¼@ 72½
Brewing, No. 1 to choice.....	85 @ 95
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

The market is quiet and presents no new feature of noteworthy importance. Stocks of common to fair qualities are of more than sufficient proportions to accommodate the inquiry at current rates, which remain quotably as last noted. The only scarcity worth mentioning is of fancy feed oats, such as are sought after for race horses.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 15 @ 1 22½
White, poor to fair.....	1 07½@ 1 12½
Gray, common to choice.....	1 10 @ 1 20
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	90 @ 1 02½
Red.....	95 @ 1 20

CORN.

For new crop California Large Yellow and White corn, which has been arriving rather freely the past week the market is unsettled, and only thoroughly dry and choice stock can be relied on to bring extreme quotations. Small Yellow is mostly under the control of a few holders, and market for this variety gives strong promise of remaining against buyers for some time to come.

Large White, good to choice.....	1 07½@1 12½
Large Yellow.....	1 15 @ 1 17½
Small Yellow.....	1 50 @ 1 60
Eastern, in bulk (carload lots).....	1 10 @ 1 12½

RYE.

Values remain virtually as previously noted. Demand and offerings are both light.

Good to choice, new.....	97½@1 00
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BUCKWHEAT.

Not for many weeks have any transfers been reported. Spot stocks are almost wholly imported product in the hands of millers.

Good to choice.....	2 00 @2 10
Silverskin.....	— @ —

BEANS.

Strength is fully as pronounced in the bean market as at any recent date. Recent business has been principally in white and Lima beans, the market for these inclining more against buyers, perhaps, than in the case of other varieties represented. The probability of there being a clean-up of beans of every sort before new crop comes upon the market is generally admitted.

Pea, fair to good, 100 lbs.....	3 35 @3 50
Small White, good to choice.....	3 30 @3 45
Lady Washington.....	3 15 @3 25
Butter, small.....	3 75 @4 00
Butter, large.....	— @ —
Pinks.....	2 65 @2 85
Bayos, good to choice.....	3 15 @3 35
Reds.....	3 75 @4 00
Red Kidneys.....	4 00 @4 25
Limas, good to choice.....	5 25 @
Black-eye Beans.....	4 50 @4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @2 75
Garbanzos, small.....	2 00 @2 25

Late advices by mail from New York City give the following review of the bean market, prices quoted being per 60-lb bushel:

The feature of the market this week has been considerably larger trading in small white beans, Eastern markets calling for several carloads in addition to increased wants of special buyers, and with very moderate stocks prices have responded quickly to the improved demand. If there had been only the State goods to work on, the supply would have been soon exhausted, but quite a block of Canadian stock was held here in bond, and on this the duty was paid and the beans sold at about \$2.10 in bags; at the close some of these are jobbing at \$2.12½. State Pea in barrels advanced quickly to \$2.12½, and later to \$2.15, with a few now reaching \$2.17½. Medium have shared somewhat in the better demand, and, with offerings light, best lots have worked up to \$2.12½@2.15. Marrow have had quite dull sale most of the week and prices have further declined; one or two cars of very choice quality sold in a jobbing way at \$2.20, but for a few days past the best stock has been offered at \$2.17½, with shippers cabling \$2.15 on average best lots and getting very indifferent response. Foreign Marrow dull. With a continued quiet trade

and some accumulation of stock, Red Kidney have steadily weakened, and at the present writing the market hardly justifies a quotation above \$2.10@2.12½. White Kidney, Yellow Eye and Turtle Soup are little more than nominal; offerings are not large, but there is scarcely any inquiry for them. Foreign Medium and Pea have worked out quite satisfactorily, and prices are a shade firmer at the close. Most of the good marks of Austrian Medium sold at \$1.80, some fair quality at \$1.75, a line of 500 bags at \$1.30 in bond, prime quality at \$1.82½@1.85 duty paid, and a lot of 600 bags choice Italian at \$1.90. A Government order for 570,000 pounds will be filled very soon. Pea have ranged from \$1.85 to \$1.95 as to quality. Lima advanced 5c. and close firm at \$3.55. Only a small trade in Green and Scotch peas.

DRIED PEAS.

There is virtually nothing doing in this line, as much owing to lack of noteworthy offerings as to any other cause. No change to note in values.

Green Peas, California.....	2 00 @2 15
Niles Peas.....	2 00 @2 15

WOOL.

Spring wool is coming forward rather freely, but not as lively as a year ago, receipts up to this writing being about 3500 bags, the aggregate showing fully 1000 bags less than for corresponding time last season. Some growers are holding back, awaiting buyers. No purchases of consequence have been effected here so far. Operators are watching developments East, where there is no particular firmness at the moment, and are also awaiting a more liberal assortment here to select from. Quotations remain nominally as before.

SPRING.

Humboldt and Mendocino.....	30 @23
Northern, free.....	16 @18
Northern, defective.....	13 @16
Middle Counties, free.....	15 @17
Middle Counties, defective.....	13 @15
Southern Mountain, 12 mos.....	12 @14
Southern Mountain, free, 7 mos.....	12 @15
Southern Mountain, defective, 7 mos.....	10 @12
Nevada, as to condition.....	16 @18

HOPS.

Offerings in this market are not heavy and are mostly off qualities. Inquiry is of a light order and is principally for fancy grades, which are virtually out of stock. There is nothing to warrant or justify changing quotations, but values are poorly defined.

Good to choice, 1899 crop.....	6 @ 9
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The following report of the hop market, coming through by recent mail, is from a New York authority:

Of the receipts this week 2178 bales were from the Pacific coast, leaving less than 600 bales from this State, and of those more than one-half were in transit for export. Advances from interior markets report fewer sales of late, chiefly because of light supplies and generally defective qualities. We are inclined to think that there are less than 6000 bales unsold in this State, outside of New York City. It is difficult to get very reliable estimates from the Pacific coast, but the best information that we have warrants the statement that the amount of hops back in California, Washington and Oregon is between 32,000 and 35,000 bales. Our local market is in much the same condition as reported of late. Not much new business has transpired this week, but the deliveries to brewers are on a fairly liberal scale and stocks are being reduced steadily. The feeling as to values is steady, possibly firm on really desirable grades, the proportion of which is small.

HAY AND STRAW.

The hay market is dragging along in the same weary and unsatisfactory fashion as for some time past, so to give its condition is to simply repeat what has often been told. Prices are now so low and unprofitable that it does not seem possible for them to descend any further. At the same time, there is absolutely nothing at the moment to warrant anticipating any improvement on the present depressed condition of affairs during the balance of the season.

Wheat.....	6 50@ 9 50
Wheat and Oat.....	6 50@ 9 00
Oat.....	6 00@ 8 00
Barley.....	5 00@ 7 00
Alfalfa.....	5 50@ 7 00
Stock.....	4 50@ 5 50
Compressed.....	6 50@ 9 50
Straw, ¾ bale.....	30@ 40

MILLSTUFFS.

Although Bran did not arrive very freely, spot offerings were fairly liberal, as compared with the inquiry, and the market inclined in favor of buyers. Shorts and Middlings were held at much the same rates as last quoted, with demand and supplies both of moderate volume. Rolled Barley was held at practically the same range of prices as preced-

ing week. Values for Millod Corn remained stationary.

Bran, ¾ ton.....	11 50@12 50
Middlings.....	15 00@18 00
Shorts, Oregon.....	13 00@15 00
Barley, Rolled.....	16 50@17 00
Cornmeal.....	23 50@24 00
Cracked Corn.....	24 50@25 00

SEEDS.

The same inactivity as previously reported continues to be experienced in the market for seeds. Spot stocks of all kinds have been quite light for some time past and, aside from Flaxseed, very little of any sort has been lately received. In quotable rates there are no changes worth mentioning.

Mustard, Trieste.....	3 25@3 50
Mustard, Yellow.....	4 50@4 75
Flax.....	2 00@2 25
Canary.....	3½@ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4½
Timothy.....	4 @ 4½
Alfalfa, Utah.....	9 @10

BAGS AND BAGGING.

Values for Grain Bags remain in same position as for some weeks past, and nothing to indicate any fluctuations of consequence in the near future. There will doubtless be some efforts later on to advance prices, but there is no certainty at this writing that any special success will attend the same. Business in Wool Sacks is of fair volume and at steady rates, quotations being for bale lots.

Calcutta Grain Bags, buyer June-July.....	6¼@—
Calcutta Grain Bags, spot.....	6¼@—
San Francisco Grain Bags, 22x36, spot.....	6¼@—
State Prison Bags, ¾ 100.....	5 65@—
Wool Sacks, 4 lbs.....	—@32½
Wool Sacks, 3½ lbs.....	—@28½
Fleece Twine.....	7½@—
Gunnies.....	—@12½
Bean Bags.....	4½@ 5½
Fruit Sacks, cotton.....	6½@ 7½

HIDES, PELTS AND TALLOW.

There is little improvement to note in the Hide market, trade being slow in Dry stock at the figures last quoted. Values for Wet are without quotable change, but offerings move more readily. Pelt market is quiet at previous range of prices. Tallow is commanding unchanged rates, although demand cannot be termed brisk.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 @ 9	
Medium Steers, 48 to 56 lbs.....	9 @ 8	
Light Steers, under 48 lbs.....	9 @ 8	
Heavy Cow Hides, over 50 lbs.....	9 @ 8	
Light Cow Hides, under 50 lbs.....	9 @ 8	
Wet Salted Kip.....	9 @ 8	
Wet Salted Veal.....	9 @ 8	
Wet Salted Calf.....	10 @ 9	
Dry Hides.....	18 @ 14	
Dry Kip and Veal, 11 to 16 lbs.....	17 @ 13	
Dry Calf, under 4 lbs.....	18 @ 15	
Salted Horse Hides, large.....	2 50 @ —	
Salted Horse Hides, medium.....	2 00 @ —	
Salted Horse Hides, small.....	1 00 @ —	
Dry Horse Hides, large.....	2 00 @ —	
Dry Horse Hides, small.....	75 @1 00	
Dry Colts' Hides.....	50 @ 75	
Pelts, long wool, ¾ skin.....	1 00 @1 25	
Pelts, medium, ¾ skin.....	70 @ 90	
Pelts, short wool, ¾ skin.....	35 @ 60	
Pelts, shealing, ¾ skin.....	20 @ 35	
Deer Skins, best summer.....	27½@ 30	
Deer Skins, good medium.....	20 @ 22½	
Deer Skins, thin winter.....	— @ 10	
Elk Hides.....	10 @ 12	
Tallow, good quality.....	5 @ 5½	
Tallow, No. 2.....	4½@ 4¾	
Goat Skins, perfect.....	30 @ 37½	
Goat Skins, damaged.....	10 @ 20	
Kid Skins.....	5 @ 10	

HONEY.

Very little doing in this line, not only on account of limited demand, but also owing to holdings being too small to admit of anything like wholesale operations. Recent transfers of a small jobbing character are at figures showing values to be practically unchanged.

Extracted, White Liquid.....	7½@ 8
Extracted, Light Amber.....	7 @ 7½
Extracted, Amber.....	6 @ 5½
White Comb, 1½ frames.....	11½@12½
Amber Comb.....	8 @10

BEESEWAX.

There is not much coming forward from any quarter and stocks in this center are light. Market is firm at the quotations noted.

Good to choice, light, ¾ lb.....	26 @27
Dark.....	24 @25

LIVE STOCK AND MEATS.

Market for Beef is fairly steady, but no large quantity is required for immediate consumption. Mutton is not coming forward in heavy quantity, neither is the demand active and prices remain without appreciable change. Veal and Lamb are arriving in moderate quantity and are moving into consuming channels at slightly

lower values. The Hog market was moderately firm at the current rates, there being no lack of demand for all the desirable stock offering.

Beef, first quality, dressed, net $\frac{1}{2}$ lb.....	6 1/2 @ 7
Beef, second quality.....	6 1/4 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 @ — c; wethers.....	7 1/2 @ —
Hogs, hard grain fed, medium.....	5 1/2 @ —
Hogs, small, fat.....	5 1/2 @ —
Hogs, large, hard.....	5 1/2 @ 5 1/2
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ —
Hogs, country dressed.....	5 1/2 @ 6
Veal, small, $\frac{1}{2}$ lb.....	6 @ 8 1/2
Veal, large, $\frac{1}{2}$ lb.....	7 @ 8
Lamb, spring, $\frac{1}{2}$ lb.....	9 1/2 @ 10

POULTRY.

Receipts of most kinds of poultry were lighter than for preceding week, but in the matter of quotable rates there was no special improvement to record. Choice Young Chickens continued most in favor and sold to best advantage, some extra choice as to size and condition commanding above quotable rates. Turkey market was slow and the little demand which existed was almost wholly for Hens, few buyers being willing to take Gobblers at any figure.

Turkeys, dressed, $\frac{1}{2}$ lb.....	— @ —
Turkeys, live hens, $\frac{1}{2}$ lb.....	12 @ 13
Turkeys, live gobblers, $\frac{1}{2}$ lb.....	9 @ 11
Hens, California, $\frac{1}{2}$ dozen.....	3 50 @ 4 50
Roosters, old.....	3 50 @ 4 00
Roosters, young (full-grown).....	6 00 @ 6 50
Fryers.....	5 50 @ 6 00
Broilers, large.....	4 50 @ 5 00
Broilers, small.....	3 00 @ 3 50
Ducks, $\frac{1}{2}$ dozen.....	4 50 @ 5 50
Geese, $\frac{1}{2}$ pair.....	2 00 @ 2 25
Goslings, $\frac{1}{2}$ pair.....	2 25 @ 2 75
Pigeons, old, $\frac{1}{2}$ dozen.....	1 75 @ 2 00
Pigeons, young.....	1 75 @ 2 00

BUTTER.

Market remained heavy, especially for high grade creamery butter, stocks being largely of this description. Shipping orders from the North have fallen off heavily. In Oregon and Washington the home production is showing marked increase. Considerable quantities of butter from Australia are now being landed in British Columbia.

Creamery, extras, $\frac{1}{2}$ lb.....	18 1/2 @ —
Creamery, firsts.....	17 1/2 @ —
Creamery, seconds.....	17 @ —
Dairy, select.....	17 @ —
Dairy, seconds.....	15 1/2 @ 16 1/2
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 15
Creamery in tubs.....	19 @ 20
Pickled Roll.....	— @ —
Firkin, California, choice to select.....	19 @ 20
Firkin, common to fair.....	17 @ 18

CHEESE.

New is in liberal supply, as compared with the demand, and market is fully as weak as previously noted. Small quantities are going outward and more would be shipped if the cheese offering in wholesale quantity was sufficiently aged to stand a long trip. Sharp or well-seasoned cheese is scarce, both domestic and Eastern, and market for same is firm.

California, fancy flat, new.....	8 @ —
California, good to choice.....	7 1/2 @ —
California, fair to good.....	7 @ —
California Cheddar.....	— @ —
California, "Young Americas".....	7 1/2 @ 9

EGGS.

The market has shown more firmness, and it looks as though prices for choice fresh had touched bedrock for the season. That there will be any radical improvement, however, for the next thirty or sixty days is not probable. Receipts are showing some decrease, supposed to be largely due to shippers holding back supplies on account of Easter, and also to the setting of incubators.

California, select, large, white and fresh.....	15 1/2 @ 16
California, select, irregular color & size.....	14 1/2 @ 15
California, good to choice store.....	13 1/2 @ 14
Eastern, as to section and grading.....	— @ —
Eastern, cold storage.....	— @ —

VEGETABLES.

Most of the Spring and early Summer vegetables now on market were in increased supply, and market in the main was lower than previous week. Asparagus was in particularly heavy receipt. Tomatoes made a better showing than for some time past, including some from Mexico. Winter vegetables were in light stock. Onions of choice quality brought stiff prices.

Asparagus, $\frac{1}{2}$ box.....	75 @ 1 50
Beans, String, $\frac{1}{2}$ lb.....	5 @ 8
Cabbage, choice garden, $\frac{1}{2}$ 100.....	40 @ —
Cauliflower, $\frac{1}{2}$ dozen.....	50 @ —
Cucumbers, hothouse, $\frac{1}{2}$ doz.....	50 @ 1 50
Egg Plant, $\frac{1}{2}$ lb.....	4 @ 10
Garlic, $\frac{1}{2}$ lb.....	2 1/2 @ 3 1/2
Onions, Yellow, Cal., good to choice.....	— @ —
Onions, Oregon, $\frac{1}{2}$ cental.....	3 25 @ 3 60
Peas, Sweet, garden, $\frac{1}{2}$ lb.....	2 1/2 @ 3
Peas, Green, $\frac{1}{2}$ sack.....	1 25 @ 2 00
Peppers, Green Chile, $\frac{1}{2}$ lb.....	— @ —
Peppers, Bell, $\frac{1}{2}$ lb.....	— @ —
Rhubarb, $\frac{1}{2}$ box.....	75 @ 1 15
Squash, Summer, $\frac{1}{2}$ box.....	75 @ 1 00
Tomatoes, Southern, $\frac{1}{2}$ box.....	1 50 @ 2 25
Tomatoes, Bay, $\frac{1}{2}$ box.....	— @ —

POTATOES.

Values in the potato market have not fluctuated materially during the week under review. Offerings were fairly liberal, but the proportion of choice to select was small. While quotations were without special change, only for very best did the market show firmness. New potatoes are now coming forward at the rate of 200 to 300 sacks per day. An occasional car or two of Sweets are still being landed here from Merced.

Burbanks, River, $\frac{1}{2}$ cental.....	40 @ 90
Burbanks, Bay counties, $\frac{1}{2}$ cental.....	60 @ 95
Burbanks, Humboldt.....	70 @ 1 00
Burbanks, Oregon.....	50 @ 1 05
River Reds.....	90 @ —
Burbanks, Salinas, $\frac{1}{2}$ cental.....	— @ —
Early Rose.....	75 @ 90
Garnet Chile.....	90 @ 1 00
Peerless.....	— @ —
New Potatoes, $\frac{1}{2}$ cental.....	1 25 @ 2 00
Sweet, River, $\frac{1}{2}$ cental.....	— @ —
Sweet, Merced.....	2 00 @ 2 25

The Fruit Market.

FRESH FRUITS.

Aside from Apples out of cold storage, the market is about bare of fresh deciduous fruits. Cold storage stock is being held at generally unchanged figures. Strawberries were in only moderate receipt, the small selling mainly at 50 @ 75c per drawer and the large at 20 @ 40c, as to quality. The first Blackberries of the season arrived from Covina and were reported sold at \$3.50 per 15-basket crate. The first Raspberries of the season were received from San Leandro and were quoted at \$1.50 per drawer.

Apples, fancy, 4-tier box.....	1 75 @ 2 25
Apples, good to choice, $\frac{1}{2}$ 50-lb box.....	1 25 @ 1 75
Apples, common to fair, $\frac{1}{2}$ 50-lb box.....	50 @ 1 00
Strawberries, Longworth, $\frac{1}{2}$ chest.....	10 00 @ 15 00
Strawberries, Large, $\frac{1}{2}$ chest.....	5 00 @ 8 00

DRIED FRUITS.

A very quiet market continues to be experienced in cured and evaporated fruits, trade being of light proportions and not up to expectations generally entertained earlier in the season. As the opening of the new season is only about sixty days distant, Apricots of this year's curing being likely to appear on market by the middle of June, it must be admitted the time is growing short for the development of activity sufficient to effect a clean-up before the fruit of the current year enters the field for custom. As soon as new product is obtainable, it will naturally be given the preference. The outlook for a large yield of most kinds of fruit in this State this summer could not at present be much more favorable. This is having a decided effect on the market at this date, causing purchasers as a rule to avoid ordering heavily, and making distributors anxious to dispose of most of present holdings during this month and May. Aside from a moderate movement in Prunes at fully as easy figures as were noted in last review as being current, there is little doing. The range on Prunes is narrow, small sizes being scarce and difficult to obtain in noteworthy quantity at 2 1/2 @ 2 3/4c, while medium to large are going at 3 @ 4c. Quotations for other fruits remain unchanged, but sellers are more readily found than buyers at full current figures. Stocks of Peaches and Apples are large enough to admit of considerable wholesale trading. Figs are also in liberal supply for this late date. While there are only moderate quantities of Apricots, Pears and Plums in the hands of the wholesale and jobbing trade, not very many orders for either variety are apt to go unfilled at present rate of movement.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, $\frac{1}{2}$ lb.....	10 1/2 @ 12
Apricots, Royal, fancy.....	12 1/2 @ 13
Apricots, Moorpark.....	13 @ 15
Apples, in 50-lb boxes, rings, pressed, fancy.....	7 @ —
Apples, 50-lb boxes, rings, pressed, good to choice.....	5 1/2 @ 6 1/2
Figs, White, fancy pressed.....	5 1/2 @ 6 1/2
Peaches, unpeeled, good to choice.....	5 @ 6
Peaches, unpeeled, fancy.....	7 @ 7 1/2
Peaches, peeled, in boxes.....	12 1/2 @ 15
Pears, unpeeled Bartletts, halved, fancy.....	9 @ 10
Pears, halved, unpeeled Bartletts.....	6 1/2 @ 8
Pears, quartered, unpeeled Bartletts.....	6 1/2 @ 7 1/2
Plums, Black, pitted.....	6 1/2 @ 7 1/2
Plums, White and Red.....	7 @ 8
Prunes, in sacks 40—50s.....	3 1/2 @ 4
50—60s.....	3 1/4 @ 3 1/2
60—70s.....	3 1/4 @ 3 1/2
70—80s.....	3 @ 3 1/4
Prunes in boxes, 1/2c higher for 25-lb boxes, 1/2c higher for 50-lb boxes.	— @ —
4 sizes Santa Claras and equal.....	3 @ —
4 sizes San Joaquin and Northern.....	2 1/2 @ 2 3/4
Prunes, Silver.....	4 @ 7

COMMON SUN-DRIED.

Apples, sliced.....	4 @ 5
Apples, quartered.....	4 @ 5
Figs, Black.....	— @ 3
Figs, White.....	3 @ 3 1/2
Peaches, unpeeled.....	5 @ 6

Mail advices of late date from New York City furnish the following review of the dried fruit market:

The market for evaporated apples has

shown little change this week; exporters have taken a moderate quantity of stock and there has been a steady jobbing demand. High-grade prime are occasionally held above 6c. for wood-dried, but that figure has covered most sales and wire-dried would have to go lower; choice and fancy work out as quoted, though outside figure extreme. Sun-dried apples are dull and weak, with prices showing more decline on all grades. Chops plenty, but mostly wet or otherwise unattractive, and slow sale from \$1.00 @ 1.35 or \$1.40; choice heavy packed would command \$1.50 or more, but such scarce. Cores and skins in quite liberal supply and lower. Scarcely any huckleberries left. Blackberries higher. Raspberries steady. California peaches have met a light jobbing demand at barely steady prices. Apricots quiet and easy.

Apricots, Cal, Moorpark, 1899, $\frac{1}{2}$ lb.....	15 @ 18
Apricots, Cal, Royal, 1899, $\frac{1}{2}$ lb.....	12 1/2 @ 13 1/2
Peaches, Cal, 1899, peeled, $\frac{1}{2}$ lb.....	16 @ 20
P. aches, Cal, 1899, unpeeled, in bxs, $\frac{1}{2}$ lb.....	8 @ 9
Peaches, Cal, 1899, unpeeled, in bags, $\frac{1}{2}$ lb.....	7 1/2 @ 9
Prunes, Cal, 1899, $\frac{1}{2}$ lb.....	3 1/2 @ 7

RAISINS.

There are no evidences of anything of consequence doing in this line, and it would be phenomenal were it otherwise at this time of year. Quotable values as fixed by the Growers' Association remain unchanged. There are reports of shading of rates to buyers on some small holdings.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, $\frac{1}{2}$ box.....	1 60 @ —
do do 2-crown, $\frac{1}{2}$ box.....	1 50 @ —
Valencia Layers, $\frac{1}{2}$ 20-lb box.....	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6 1/4 @ —
Loose Muscatel, seedless.....	5 @ —

Pacifics.—2-crown loose Muscatel, 5 1/4c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c. Orientals.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/4c; 4-crown, 6c.

(Above prices for loose raisins are for 50-lb. boxes.) Thompson Seedless.—Bleached fancy, $\frac{1}{2}$ lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c. Sultanas.—Bleached fancy, $\frac{1}{2}$ lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c. Loose Valencias.—Fancy, $\frac{1}{2}$ lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c. Valencia Clusters.—Fancy, $\frac{1}{2}$ lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Orange market has been poorly stocked with choice to select Navels, and such have met with ready sale at advanced figures. That a much more favorable market than the present will be experienced is not likely, as early Summer fruits will soon be on market in wholesale quantity. Common grades of Oranges remained plentiful and were obtainable at much the same low figures as have been current for some weeks past. Lemon market was notably unchanged, but demand was not active, and top figures could be realized only in a small way for most select. Limes were in fair supply and Mexican product was offered at 50c. per box less than last quoted.

Oranges—Navels, fancy $\frac{1}{2}$ box.....	2 50 @ 3 00
Navels, good to choice.....	2 00 @ 2 50
Navels, common to fair.....	1 00 @ 2 00
California Seedlings.....	75 @ 1 50
Lemons—California, select, $\frac{1}{2}$ box.....	2 25 @ 2 50
California, good to choice.....	1 50 @ 2 00
California common to fair.....	1 00 @ 1 25
Limes—Mexican, $\frac{1}{2}$ box.....	5 00 @ 5 50
California, small box.....	50 @ 1 25

NUTS.

Stocks of Almonds in the hands of jobbers have been materially reduced through recent sales, but market remains easy in tone. Walnuts are in light supply and choice are especially difficult to secure. Peanuts continue to be offered sparingly, both domestic and Eastern. There are no quotable changes to record in values for nuts of any sort.

California Almonds, shelled.....	14 @ 17
California Almonds, paper shell, $\frac{1}{2}$ lb.....	10 @ 11
California Almonds, soft shell.....	7 @ 8
California Almonds, hard shell.....	4 @ 5
Walnuts, White, soft shell.....	9 @ 10
Walnuts, White, California, standard.....	7 @ 8
Chestnuts, California Italian.....	8 @ 10
Peanuts, California, fair to prime.....	5 @ 6
Peanuts, Eastern, hand-picked.....	6 @ 6 1/2
Pine Nuts.....	5 @ 6

WINE.

This market remains in all essential respects much the same as noted in last review. Buyers are keeping in the background as much as possible, at the same time not missing any opportunities to secure bargains, if they can help it. The quotable range on dry wines of 1899 vintage may be stated at 14 @ 20c per gallon, San Francisco delivery. Most of the busi-

ness is within range of 14 @ 16c, these figures being in accord with the views of dealers, although they will occasionally bid up to 17 1/2c, where the wine is especially desirable. Some cellars of extra choice stock are held at 20c per gallon.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{4}$ sacks.....	214,706	4,832,369
Wheat, centals.....	209,512	5,216,263
Barley, centals.....	96,612	4,567,859
Oats, centals.....	8,490	661,303
Corn, centals.....	3,930	104,665
Rye, centals.....	3,911	91,752
Beans, sacks.....	20,871	334,535
Potatoes, sacks.....	1,522	1,017,940
Onions, sacks.....	2,778	138,943
Hay, tons.....	1,693	127,893
Wool, bales.....	159	38,919
Hops, bales.....		9,427

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{4}$ sacks.....	114,798	3,275,326
Wheat, centals.....	162,836	4,576,520
Barley, centals.....	80,381	3,652,218
Oats, centals.....	573	37,211
Corn, centals.....	394	16,233
Beans, sacks.....	855	22,640
Hay, bales.....	1,698	109,221
Wool, pounds.....	4,324,433	1,655,334
Hops, pounds.....	2,001	968,513
Honey, cases.....	22	3,420
Potatoes, packages.....	1,254	62,834

California Dried Fruit at New York.

New York, April 4.—Evaporated apples, common, 4 1/2 @ 5c; prime wire tray, 5 1/2 @ 6c; choice, 7 @ 7 1/2c; fancy, 7 1/2 @ 8 1/2c. California dried fruits inactive at unchanged values. Prunes, 3 1/2 @ 6c. Apricots, Royal, 13 @ 15c; Moorpark, 15 @ 18c. Peaches, unpeeled, 7 1/2 @ 9c; peeled, 18 @ 22c.

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Agriculture and the Census.

To build up a great office like the census office in fifteen months from absolutely nothing to an efficient machine, employing about 3000 men in Washington and about 50,000 elsewhere in the country, is a difficult task, and entire success is out of the question. The office naturally compares itself with the stage of preparation attained at the same period ten years ago, and tried by this test, it has gained several months on its predecessor. One of the problems before it is how to put in the time thus secured in such a way as most to benefit the census.

In the agricultural division the need of time for preliminary work is perhaps as great as anywhere in the census office. Farmers, as a class, do not keep their accounts as well as manufacturers, and the returns from farmers may occasionally include serious errors which a trained eye will at once detect. Hence the farm schedules must be examined and such errors corrected before the tables can be made up from them with safety. If a farmer reports that his land sown to wheat was ten acres, and the yield 4000 bushels, it is clear that an average yield of 400 bushels to the acre is incredible, and must be rejected or corrected in accordance with the probabilities. Sometimes the truth can be made out by an expert from comparison with entries in other parts of the schedules; sometimes correspondence must be opened to settle the doubt. All this ranks under the general head of verifying the schedules, and the agricultural division plans to give all the time possible to the work of verifying each of the millions of farm schedules. To accomplish this in the time allowed, the work of several hundred clerks will be required, and they must have hard and fast rules to guide them. For example, they might be told: When the wheat reports show a product of over forty bushels to the acre, they are suspicious and must be laid aside for an expert to pass upon. But any such rules must vary with the section of the country. A yield of twenty bushels in one section might be more questionable than a yield of forty bushels in another. Hence the division must fix in advance what is the range of reports in each part of the country and for each crop that may be accepted as probable on their face and not requiring special examination. To get the limits of probability for this purpose for each county in the United States, that is, the maximum and minimum yield and the maximum and minimum price which may be accepted without verification; is the object of an extensive correspondence now being carried on by the agricultural division under the direction of Mr. L. G. Powers, Chief Statistician in charge of that division. Three simple schedules have been prepared and printed on different colored paper in order that they may be readily distinguished one from another. One of them covers ordinary garden vegetables, a second covers fruits, and the third the great staple field crops. Each asks about the units of measure employed and the net price realized; and the two more important schedules, those for staple field products and for vegetables, ask for the highest and lowest yield of each crop per acre. These schedules are being mailed to prominent farmers all over the country and in many instances returns have already been received. When the returns have been received and tabulated, a scheme will be made from them of

what is to be accepted as correct in each case and what is to be probed farther. The only aim of the office is to get what was really the intention of the farmer in answering the questions. If the presumption is strongly against his meaning what the schedule says, the office will try to learn by correspondence from the supervisor, or the enumerator, or the farmer himself what the real facts were.

If the farming public will continue to co-operate with the heartiness already displayed, this effort will result in a more trustworthy census of farms than has ever been taken. Farmers, as a class, are less able to co-operate than the representatives of any other great industry. Hence the census office can do more for them than it can for centralized lines of business, which can and do make their own investigations, and it will do its best to present a full and accurate photograph of this leading occupation. The director of the census urges every one interested to aid the work.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING MARCH 20, 1900.

- 645,918.—MEASURING INSTRUMENT—J. G. Hanks, Oakland, Cal.
645,901.—TRUSS—P. Maddon, Soldiers' Home, Cal.
645,669.—LAMP CHIMNEY—J. F. McHenry, Hollister, Cal.
645,825.—VEHICLES—J. Nash, Dayton, Cal.
645,631.—FIRE ESCAPE—C. H. Shields, Spokane, Wash.
645,904.—CULTIVATOR—I. D. Stockton, Penrose, Cal.
645,841.—WASHING MACHINE—C. W. Thompson, Ontario, Cal.
32,360.—DESIGN—C. E. Pierce, Avon, Wash.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

BORING DRILLS.—C. S. Stafford, San Francisco, Cal. No. 645,219. Dated March 13, 1900. This invention relates to boring and drilling devices. It consists of a stop, a drill spindle turnable therein, and mechanism by which it is rotated, a sleeve forming the lower end of the stop, and an internally threaded collar loosely turnable within the sleeve having its inner end formed with an exterior annular groove, and its lower end provided with an anti-friction bearing for the sleeve. A screw or pin passes through the inner end of the sleeve and engages the annular groove in the collar to prevent end movement thereof. A brake piece is loosely seated in the sleeve and a screw for operating the same. A yoke is carried on the outer end of the sleeve below a brake screw, and a device is carried by the yoke to engage the work to be drilled. The operative devices consist of a beveled gear journaled and turnable upon the side of the stop, having outer and inner teeth, corresponding bevel pinions loosely turnable upon the ends of the sleeve, with lugs upon their adjacent faces, a two-part sliding collar loosely fitting the sleeve between the pinions having slots in its outer ends to engage either of the lugs upon the pinions whereby a varying rate of rotation of the drill will be produced.

WATER WHEEL.—S. J. Tutthill, assignor to Tutthill Water Wheel Company, of San Francisco, Cal. No. 645,221. Dated March 13, 1900. This invention relates to improvements in water wheels

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G. D. STEAD SOAP CO. SAN DIEGO

of that class in which buckets are disposed around the periphery and adapted to receive water delivered into them by a nozzle under a high head or pressure. In this class of wheels it has been customary to bolt the buckets separately upon the rim, but the gravel or gritty material in the water soon wears the buckets out and cuts off the nuts or bolts by which they are secured. In this invention a plurality of buckets are cast upon segments which are removably fitted to the periphery of the wheel or disk and the ends of the segments abut so as to make practically a continuous plate on each side, thus distributing the strain upon the securing bolts, and these bolts are covered and protected from the impact of the water. The hub of the wheel is also extended so that it covers and protects that portion of the shaft upon each side of the wheel which is in line with and liable to be acted upon by the jet of water from the nozzle. These parts are all formed in a plurality of sections so that any part may be removed and another substituted without destroying the whole structure.

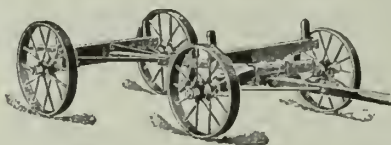


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lightens the load—shortens the road.

helps the team. Saves wear and expense. Sold everywhere.

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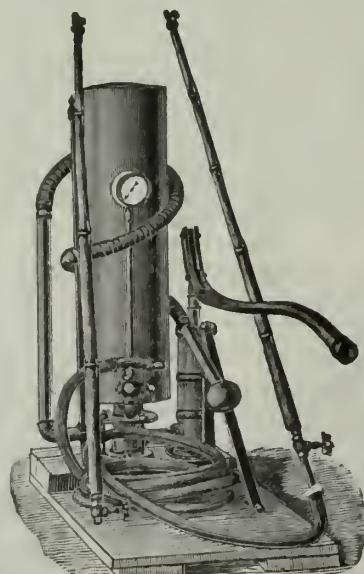
Pacific Steel Handy Wagon.

WHEELS.....28 and 34 inches high.
TIRES.....4 and 5 in. wide, 1/2 in. thick.
AXLES.....1 1/2 inch, solid steel.
BOLSTERS AND AXLE STOCKS...White oak.
CAPACITY.....Guaranteed 5000 lbs.

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PATENTS



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CHOICE ROSES, Strong Plants, \$2.40 per dozen.
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Garden and Field.

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The latest and most effective insecticide. As it is white and adheres to the leaves you can always tell when a second application is needed. Never scalds or burns the foliage. Used by the Gypsy Moth Commission of Massachusetts. Endorsed by leading State Entomologists. Send for free booklet "Injurious Insects." Made and sold only by

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Improved Fresno Scraper.

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You can get a constant stream of water delivered to your buildings from a stream or spring by means of this engine.
RUNS ITSELF.
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Send your conditions for catalogue and guaranteed estimates.

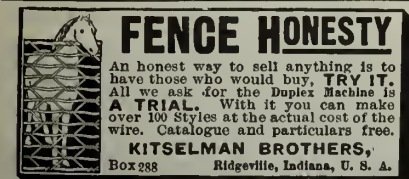
RIFE ENGINE CO., 126 Liberty Street, New York.



PAGE

19TH OR 20TH CENTURY?

Take your choice, but use Page Fence on the farm.
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FENCE HONESTY

An honest way to sell anything is to have those who would buy, TRY IT. All we ask for the Duplex Machine is A TRIAL. With it you can make over 100 Styles at the actual cost of the wire. Catalogue and particulars free.

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Analysis of Fertilizers, Soils, Waters, Wines, Foods, Petroleum Oils, Etc.
Instruction given in all branches of chemistry.
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CORRESPONDENCE.

Napa and Lake Counties.

TO THE EDITOR:—The San Francisco & Clear Lake Railroad, which has been agitated for several years, has at last crystallized into something tangible. The capitalists of San Francisco are interesting themselves in the project, realizing the fact that San Francisco, to become the metropolis of the West, must bestir itself to build railroads as feeders, to bring to its doors the products of all accessible districts, and, as an earnest of good intentions, have appropriated \$10,000 for a survey of the road and sent a canvasser into the field to secure rights of way through the lands which the proposed road will pass. This will not be difficult to do, as the ground has been canvassed once in a preliminary way, and nearly all expressed their willingness to give right of way gratis and also to help it along by contributions and work.

There are at present two routes contemplated: one over Vallejo, connecting with a line of steamers from there to San Francisco; and the other to connect with the S. F. & N. P. R. R. The former seems to be the favorite scheme, but both will run through Napa, and from there on the eastern side of the foothills up to Conn canyon, from there up Sage canyon, entering at the lower end of Chiles valley, from where a diverging line will be built into Berryessa valley; the main line running through Chiles valley its full length, then into Pope valley up to Butte canyon, in Lake county, through the Loconoma and Guenoc valleys, connecting with Middletown, and to Lower Lake, where connection can easily be made by steamers with Lakeport, Upper Lake and all of the mineral springs on its shores.

That this will open up a country unsurpassed in agricultural, sanitary and mineral resources, which so far has been almost cut off from communication and had to rely entirely on transportation by teams, will be apparent to every one. It passes through some of the best wheat-producing lands of the State, where crops always flourish and never fail, even in the driest seasons. Its fruits and grapes are already celebrated, as they are not surpassed for fine coloring and quality in any section; but they are almost without a market, as they have to be transported by teams over rough and dusty roads. The mineral resources along the route are great and manifold, embracing magnesia, sandstone of the finest quality, copper, quicksilver, soapstone, sulphur and borax, besides heavy timber for firewood and for building purposes—spruce, balsam and sugar pine. But the manifold mineral springs make it the great sanitarium of the West, already visited by thousands, and the very paradise of the hunter and fisherman. Now, it can only be reached by tedious dusty trips by team or stage of thirty-five miles; what will it become when it can be reached by a convenient ride of three to four hours—when business men of the city can send their families up there for a few months' stay, can run up there on Saturday and return to the city Monday morning, in time for business in the afternoon, refreshed and rested in body and soul?

But, perhaps, Mr. Editor, some of your readers may not consider this an agricultural subject. I think it is, and will give them my reasons: All our agricultural resources need developing, and here we have an immense district, fertile in all the resources of agriculture and horticulture, which so far has been almost a terra incognita to the civilized world; debarred from the means of development by lack of transportation; with lands so cheap that it seems incredible to those more favored, and offering the means for thousands of happy homes to industrious families, who would gladly take advantage of the facilities offered them there, provided a market is assured them for their products. I am in receipt of hundreds of letters inquiring for lands, which can be had there yet for a trifle. If we intend to develop the State and its agricultural resources, here is an opportunity.

Napa.

GEORGE HUSMANN.

"ALPHA-DE LAVAL" CREAM SEPARATORS

THE 20TH CENTURY "ALPHA" DE LAVAL machines are the very acme of perfection in cream separators—embodying the new and perfected development of the "ALPHA" disc principle.

The creameryman or dairyman who has not examined or used a 20TH CENTURY "disc" machine sufficiently to understand the scope and importance of the new improvements has yet to learn the merits and virtues of the up-to-date cream separator.

In a word, the 20TH CENTURY "ALPHA" machine, in any of its sizes, is simply beyond the pale of comparison with anything else that natural force and human ingenuity has yet devised in the shape of a cream separator. It stands in a class by itself—far above and beyond all possible competition.

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P & B ROOFING possesses all the requirements of a first-class roof covering. It is waterproof, durable, inexpensive, easily laid. Ask your dealer for a circular, or address the makers.

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The Machine that will Build a Butter Trade.

Because it will make a superior quality of butter.

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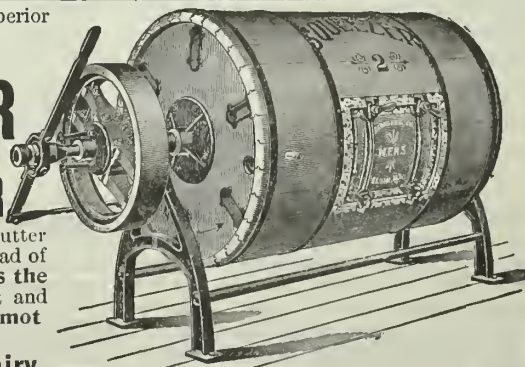
squeezes the water and butter milk out of the butter instead of grinding it. It preserves the grain, distributes the salt and color evenly and prevents mold. It is

Made for the Dairy,
and is easily operated and readily cleaned. No dairy should be without it.

Will do Exhaustive Churning at any Temperature.

We are prepared to repair all cream separators and employ highly skilled men for this work.
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AVON, WASH., Jan. 8, 1900.



The longer I run the No. 5 U. S. Separator the better I like it. It skims perfectly clean, runs easily and is easy to clean. Before I bought it I thought it would be lots of trouble, but I find I was mistaken. I had rather run the milk through the Separator than warm the milk for the calves. If any one has ten cows, the U. S. Separator will pay for itself in one year, besides having sweet milk for the calves.

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Write for catalogues containing many letters telling of the money-making qualities of the Improved U. S. Separator.

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Patrons of Husbandry.

From the Worthy Master.

TO THE EDITOR:—Alfred Edwards, in the Michigan Farmer, on "Grange Fire Insurance," writes:

Statistics show that 41 of the 112 mutual fire insurance companies in New York State are under the auspices of the Grange, and that they carry \$100,000,000 at a cost of \$5.48 for a term of five years per \$1000, which makes a cost of about \$1.09 per \$1000 each year.

In Ohio the cost has been \$15.60 per \$1000 for a term of seventeen years, making an average cost of a little less than 92 cents per year.

Brother Patrons, do not be afraid of Grange fire insurance; it is assuredly a good thing. Get your organization. Get your best men for officers. Be especially careful that you get a good man for secretary, as this is a very important office. I insist upon the rule that every member shall carry a part of his risk. Do not insure buildings above two-thirds of their actual cash value. Instruct your members that it is their duty to be careful and to use every reasonable precaution to avoid loss by fire. Talk insurance in your local and county Grange meetings. Get and keep every member interested in the best success of the company, and you will have cheap insurance that is both fraternal and mutual and a pleasure and a profit to all concerned.

We ought to be able to profit by the experience of Patrons in other States. Grange fire insurance is satisfactory in Sonoma county. Patrons, think of what Brother Edwards says and profit by it. While you are about it you can be considering life insurance on the plan of \$1 for each member—that is, where a member dies, each one pays \$1 and the beneficiary receives as many dollars as there are members. This plan builds up the Grange wonderfully fast in New Hampshire, for instance.

NEW GRANGES.—Two new Granges organized this month; one at El Verano and another at Coyote in Santa Clara county, named Unity Grange.

Brother Winans and I are at work and we have fourteen names, secured in four hours, as a starter for a Grange at Morgan Hill. If all would work that way we would have plenty of good Granges in California.

We select the very best men and women in the community. If the Patrons do not hear from me or see me often, know you by this that Brother Winans and I are busy organizing Granges. I expect to visit Fresno and Tulare counties next month.

Let there be a movement all along the line. W. M. Jones writes that 102 Granges were organized in January and February of this year, as against fifty-one in the same time the year before. The column is advancing. Let California keep pace!

I like the motto: "The farmer is of more consequence than the farm, and should be first improved." The Grange is a school. As Bro. Ward, the Master of our baby Grange at Morgan Hill, says: "I take it that the Grange is a past graduate school for farmers." Here the farmers' wives and daughters meet. Their interests are one. If the farmers can not form a trust, it is because they can not trust one another. If we would meet together and talk together we would learn to trust one another. G. W. WORTHEN.

San Jose.

A New Grange.

TO THE EDITOR:—After a few days canvassing on the part of G. W. Worthen, our Worthy State Master, and D. M. Winans, Worthy Deputy, a union Grange was organized at Coyote, Santa Clara county, consisting of members from Eden Vale and Coyote districts.

The Grange was christened Unity—a name we trust will be particularly applicable to its future workings.

The following officers were elected: Master, R. Fisk; Overseer, O. Stevens; Lecturer, Mrs. Emma A. Fisk; Steward, Philip E. Strickler; Assistant Steward, Fred L. Little; Chaplain, Mrs. O. Stevens; Treasurer, J. Robert-

son; Secretary, Miss Ethel Foote; Gatekeeper, Geo. Barnes; Pomona, Miss E. Barnes; Flora, Mrs. T. Fisher; Ceres, Mrs. R. Chew; Lady Assistant Steward, Miss Hattie N. Harvey; Trustees, O. H. Barnhardt, O. Stevens, Emma A. Fisk.

The officers were duly installed by Worthy State Master Worthen, assisted by Bro. Cooper of San Jose Grange.

The Grange was organized with twenty-eight charter members. Eden Vale. EMMA A. FISK.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except last on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds. 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Horses. Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

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JERSEYS—The best A.J.C.C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

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TRACY POULTRY YARDS, Tracy, Cal. Wm. M. Langdon, Prop. Specialties: B. P. Rocks and S. C. W. Leghorns. Eggs \$1.50 per 15. Closing out one-year-old Plymouth roosters at \$1.50 each. Bargains. Write for prices. Fill Your Incubator—Eggs from fine thoroughbred stock \$5.00 per 100.

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SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Buff Cochins, Barred Plymouth Rocks, White and Brown Leghorns, White Wyandottes, Black Minorcas.

FOR FINE FOWL AND EGGS send to A. Buschke, Tracy, Cal. Prices reasonable.

WILLIAM NILES & CO., Los Angeles, Cal. Poultry, Belgian Hares. Imported pedigree stock.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

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STANDARD-BRED PEDIGREED BELGIANS. Fine Does, bred or unbred. Youngsters from best strains, all ages. Booklet free. Britain Rabbitry, Watsonville, Cal.

THOROUGH-BRED PEDIGREED BELGIAN HARES. Choice young does from best strains of fancy stock. Write for particulars. S. S. Boal, 126 W. 25th St., Los Angeles, Cal.

BELGIAN HARES. Write to Fred S. Gifford, Manager Palo Alto Rabbitry, 103 California Market, San Francisco, for quotations and information concerning Belgian Hares.

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BERKSHIRE, POLAND-CHINA & DUDOC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

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MISERABLE SICKLY DOGS are never seen where Anglo-American Remedies are used. This week my folder, 12 Dog Remedies, is sent free. Geo. H. Croley, 506 Sac'to St., S. F.

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The incubator which has put an end to all hatching worries and difficulties. Its simplicity in operation and its uniform success in hatching every fertile egg makes **THE PETALUMA INCUBATOR** the best investment you can make. There's no uncertainty about its work. And then, it's built to last. 4 sizes—\$4 to \$24 eggs. We pay freight anywhere in U. S. Handsome catalogue free. **PETALUMA INCUBATOR CO.**, BOX 19, PETALUMA, CAL.



Oakland Poultry Yards,

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OAKLAND, CAL.

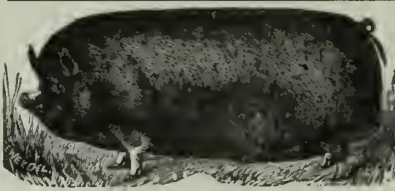
60 YARDS
THOROUGH-BRED POULTRY.



THOROUGH-BRED
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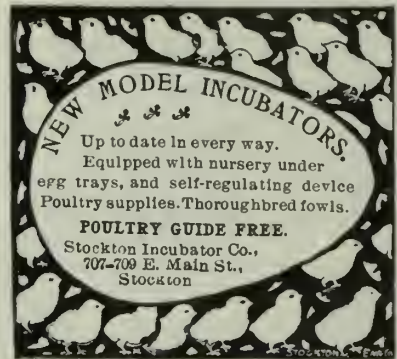
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We manufacture the best machine on the market, **The Improved Pacific.**
SEND FOR OUR 60-PAGE CATALOGUE.



Blood Will Always Tell.

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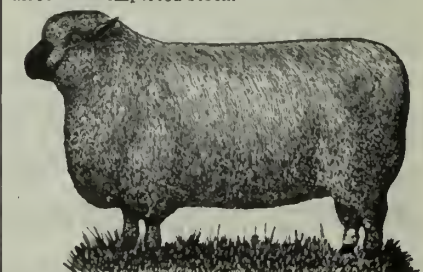
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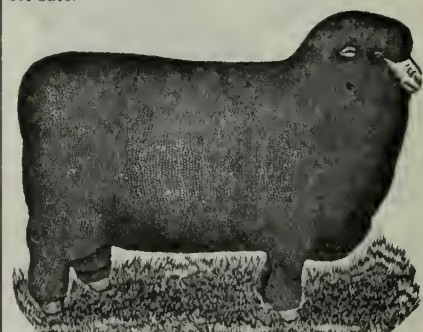
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THE VETERINARIAN.

The Horn Fly.

As our readers will soon be in the midst of another season with this pestiferous foe, it is important to know what can be done with it. During the past year the Department of Entomology of the Kansas Experiment Station made extensive trials of a number of horn fly traps and repellant mixtures for the purpose of finding some means of furnishing protection to stock from the horn fly at a reasonable cost. In no case were the fly traps effective, but with the mixtures more satisfactory results were obtained.

It is quite evident from the experiments that a large number of horn fly remedies are not as effective in Kansas as they are claimed to be in other States. For instance, fish oil ceases to be a repellant here before two days have passed, while elsewhere it is said to repel for a longer period, from two to six days. The greatest objection to the use of so many of the horn fly remedies is that the resultant benefits are not proportionate to the cost. In some cases the remedies were entirely useless. One of the best remedies on the market, in order to be reasonably effective, had to be applied every day, and in such large quantities as to make a cost of 20 cents for each application for one cow, a sum greatly exceeding in value all the benefits derived from the use of the mixture.

A KANSAS PREPARATION.—Of a number of remedies of our own compounding that were tested we have selected one which for cheapness and effectiveness seems deserving of a more extensive trial. It is not as satisfactory as we would like it to be, but it is considerably cheaper, as effective, and often more lasting than fish oil, which in our opinion is one of the best of the horn fly remedies. It is made as follows: Pulverized resin, 2 parts, by measure; soap shavings, 1 part; water, 1/2 part; fish oil, 1 part; oil of tar, 1 part; kerosene, 1 part; water, 3 parts. Place the resin, soap shavings, 1/2 part of water and fish oil together in a receptacle and boil till the resin is dissolved. Then add the 3 parts of water, following with the oil of tar mixed with the kerosene. Stir the mixture well and allow it to boil for fifteen minutes. When cool, the mixture is ready for use, and should be stirred frequently while being applied.

The mixture costs about 30 cents a gallon. From one-eighth to one-half pint is sufficient for one application. To apply the mixture, a brush is essential. We find nothing more satisfactory than a large painter's brush. At first it is well to make an application for two or three days in succession. Afterwards an application every other day will suffice. Cows, in standing in water and mud, running through weeds and brush and rubbing against trees, often remove some of the mixture. In this case it is well to retouch the unprotected parts. It is often more economical not to attempt to protect the entire animal, but only those parts not reached by the head or tail. This mixture is very sticky, and for this reason is not recommended for horses. It is perfectly safe, and in no case has it appeared detrimental to the health of the animal.

There are those perhaps who may not want to take the trouble to make the above mixture. In this case we recommend fish oil, which can be purchased at any drug store. It also has to be applied with a brush, and at the

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rate of one-eighth to one-half a pint for each application.

FOR HORSES.—We often receive inquiries for some mixture to protect horses. It must needs be of such a nature as will not mar the appearance of the horse or present his being curried. It seems difficult to obtain a mixture that possesses lasting with safe qualities. The following remedy is the best that we have tried. It is safe and does not gum the hair, and is effective for three or four hours, and even longer. It is made as follows: Fish oil, 2 quarts; carbolic acid (crude), 1 pint; pennyroyal, 1 ounce; oil of tar, 8 ounces; kerosene, 1 1/2 quarts, or enough to make 1 gallon of the mixture. This will cost about 80 cents a gallon, and must be applied with an atomizer, not with a brush. An atomizer costs about \$1.50, and can be obtained at any hardware or drug store. It is very economical in the use of the mixture and enables one to make a very quick application.

Whether or not it is profitable for one to go to this expense in protecting his stock is a question which the individual must decide for himself. In experimenting with a small dairy herd, it was very apparent that the saving of milk and butter fat from the use of horn-fly mixtures more than paid for the cost of such protection, without taking into consideration the increased comfort of the animals. Those intending to use horn-fly remedies should experiment upon a small scale first, to decide what mixtures are effective and profitable. Do not continue to use a mixture because it is widely advertised, but rather because you yourself have found it to be efficacious and profitable.

Answers by Dr. Creely.

LUMP JAW.

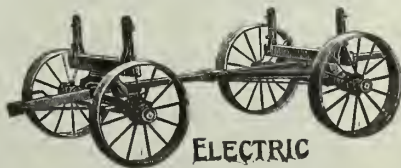
TO THE EDITOR:—I have a valuable Jersey heifer that has an enlargement on the right jaw bone. Her health and appetite are very good. It does not appear to pain her at all. I have been using tincture of iodine and olive oil mixed half and half, but the enlargement gets no better but seems to get larger. Kindly inform me if there is anything I can give her or put on the enlargement to make it go away. It looks like one had cut a goose egg in half lengthwise and fastened it to the jaw bone. It is on the under side of the bone.—SUBSCRIBER, Santa Cruz.

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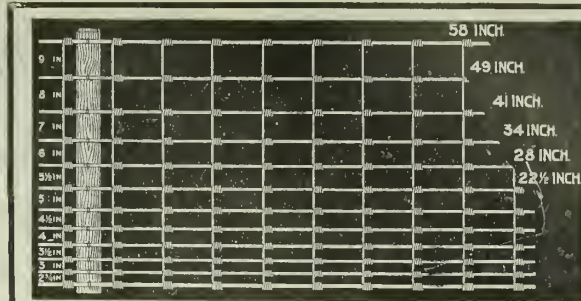


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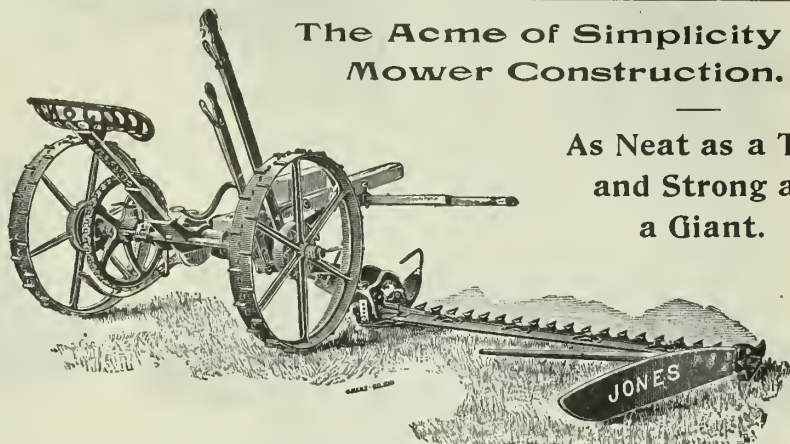
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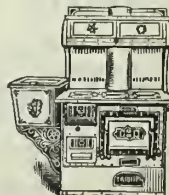


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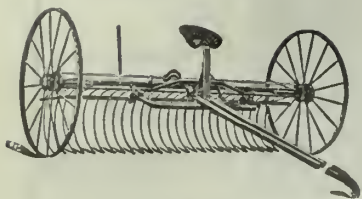
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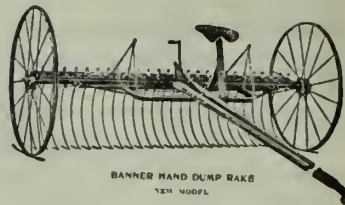
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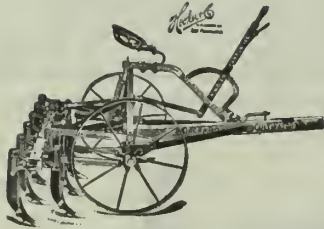
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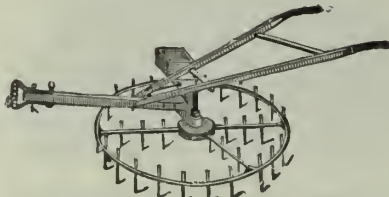
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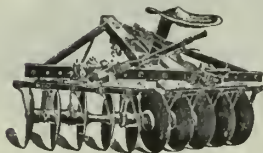
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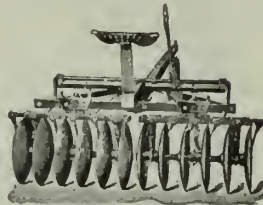
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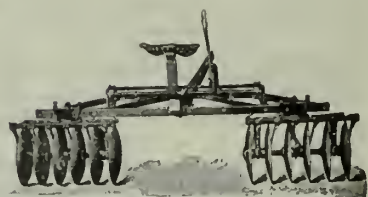
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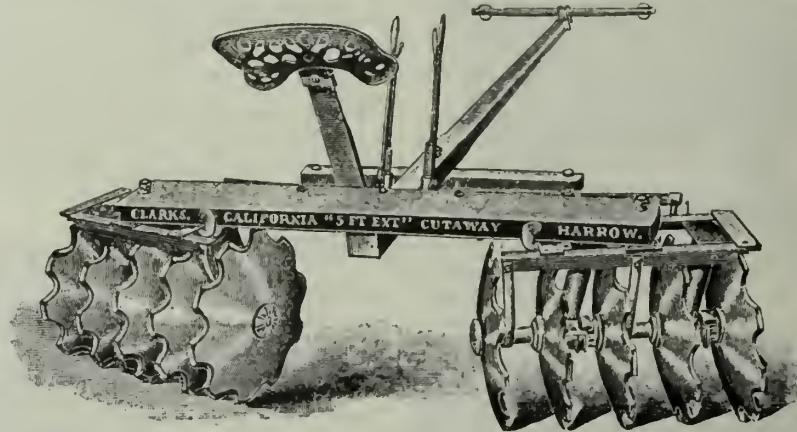
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 15.

SAN FRANCISCO, SATURDAY, APRIL 14, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

General John Bidwell.

Written for the PACIFIC RURAL PRESS by CHARLES H. SHINN.

The first, the most famous and the greatest of all the princely farmers of pioneer California, General John Bidwell of Rancho Chico, died suddenly from heart failure on April 4th, and thus came to an end one of the most interesting and picturesque of American careers. He was a contemporary of Godin, Kit Carson, Fremont, Lassen, Sutter, Vallejo. His marvelous and accurate memory held within its grasp an infinite number of details of the past sixty years of Pacific coast development, and his few published documents are among the most precious materials for the historian.

It is interesting to remember that John Bidwell, whose relationship to California began with his remarkable journey across the continent in 1841 (a journey which justly ranks among the most fascinating chapters of pioneer adventure), was thus a hewer of paths, a builder of roads, even in his boyhood. All his life long he was planting trees and making

highways. Last summer he was road building in the Sierras, and when he was stricken down the other day it was while he was working on a road. It is largely due to his efforts and his example that Chico is one of the most beautiful of tree-sheltered towns, and that Butte county has many of the best roads in California.

This stately and noble old pioneer, whose name is writ large in the history of California, was a man of the large, simple Homeric type, whose nature fitted well with the great valley-plain of the Sacramento, the snow peaks of the Sierras, the ancient oak forests of his superb farm lands. There he kept open house for a lifetime, and what a procession of famous men and women have enjoyed the hospitality of Rancho Chico these fifty years! Asa Gray and Sir Joseph Hooker were there, and also Governors and Senators, authors, musicians and artists too many to name in this brief paper.

It is not easy to synopsise in a paragraph the salient points of so active a career. One can find it set forth in the newspapers and histories. He was

born in Chautauqua county, New York, on Aug. 5th, 1819. When he came to California in 1841 there were hardly 100 "foreigners" in the whole region, and this young man of 21 easily and immediately became a leader among them. He seems to have impressed every one, even then, with his honesty and efficiency. He obtained a Mexican grant for Rancho Chico in 1845; he mined on Bidwell's Bar in 1848; he was a State Senator in the famous first session; he served in Congress; he was a candidate for Governor and for President (National Prohibition Party, 1892); he took a useful and sturdy part in public affairs, battling ceaselessly for better local government, for higher education and for many good causes.

Nevertheless, General Bidwell was first and foremost a farmer. His services to the agriculture of California have been exceedingly great. The earlier official reports in existence show his willingness to expend large sums in experimentation, and to make public the results. Since 1852 Rancho Chico has made hundreds of famous exhibits of cereals, vegetables, fruits, nuts, olive oil and a multitude of products. No other farm in California has done so much in this way to extend our fame abroad. The first raisins ever made in the State were produced here. In 1855, according to the Surveyor-General's report, he had orchards of peach, apple, fig and other fruits established; in 1857 he was



The Late Hon. John Bidwell of Chico.

irrigating by a 12-foot canal, and had a flour mill in operation. In the days when wheat was king there were no better wheat fields in California, and now there are no more beautiful orchards than those of Rancho Chico, the home of this large-hearted pioneer, this lover of forests and mountains, this friend of children and Indians and animals, this man who was famous among the famous men who laid the foundations of our commonwealth.

The English Walnut.

Though Californians have manifested due enterprise in introducing the best European varieties of the English walnut, and have demonstrated their superiority for certain regions of the State, it is a fact that the great commercial product is almost wholly grown upon seedling trees. The acreage in southern California is very largely planted with seedlings from selected trees, the seedlings coming true enough to seed to carry a large preponderance true to the type of the parent tree. The grafting in of named European varieties is increasing and may in time give to the product better form, which the best European varieties certainly have, as we hope to show by illustrations in due time. The engraving on this page shows a typical California seedling tree as selected by B. M. Lelong, Secretary of the State Board of Horticulture, for the walnut article in his report of 1896. It is eight years from the seed—the age at which bearing of the seedling usually occurs. It is also representative of the form which the seedling naturally assumes, except perhaps that it has been raised from the ground a little and runaway tendencies repressed so as to prevent unsymmetrical development. This is about all the pruning which is given the walnut tree in California practise. The walnut of this age is a very handsome tree with its large, dark-green leaves contrasting with the different hues of its new growth, and a well-kept orchard of young trees, with the trees widely spaced and the ground well cultivated, is one of the pleasing horticultural sights of California. With such a growth at bearing age as is shown in the engraving, the tree increases in size with advancing age until it reaches majestic proportions. Trees planted early in the American era in California have been reported with a girth of six feet and a height of sixty feet.



California Seedling English Walnut at Bearing Age.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, April 14, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—The Late Hon. John Bidwell of Chico; California Seedling English Walnut at Bearing Age, 225.
EDITORIAL.—General John Bidwell; The English Walnut, 225. The Week, 226.
QUERIES AND REPLIES.—Bleeding Prune Trees; Whitewash on Citrus Trees; Beans After Apricots; Weeders or Shallow Cultivators; Bran and Arsenic for Grasshoppers and Cutworms; Harvest Flies and Crane Flies; New Trees in Old Holes Again; Native Maidenhair Ferns, 227.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending April 9, 1900, 227.
STATE BOARD OF AGRICULTURE.—California Agriculture in 1899, 228.
FLORIST AND GARDENER.—Sacramento County Strawberry Growing; What Women Can Do in Vegetable Gardening, 228.
HORTICULTURE.—Unfruitfulness of the Olive; Phosphates Possibly Needed, 229.
THE SWINE YARD.—Progress of the American Hog, 229.
FRUIT MARKETING.—Horticultural Statistics of 1899, 230.
AGRICULTURAL REVIEW.—231.
THE HOME CIRCLE.—California's Climate; A Sacrifice to Bhowani, 233. How to Brew Tea; One Way of Economizing Fuel, 233.
DOMESTIC ECONOMY.—Domestic Hints; Hints to Housekeepers, 233.
THE MARKETS.—Produce Market; Fruit Markets, 234-235.
THE VETERINARIAN.—Answers by Dr. Creely—Throat or Mouth Trouble; Treatment for Pink Eye; A Bad Tooth 236.
PATRONS OF HUSBANDRY.—The Political Responsibilities of Farmers, 238.
MISCELLANEOUS.—Storage of Water on Gila River, Arizona, 236. List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents; Industrial Notes, 237. Women as Inventors, 239.

The Week.

The week has seen quite a variety of weather conditions—some favorable, others otherwise. The low temperatures culminated in several quite severe frosts, covering large areas and causing considerable injury to grapes and in some instances to tree fruits as well. It does not yet appear how great the injuries have been; but both in the coast valleys, where wine grapes are largely grown, and in the interior raisin-grape regions the early reports indicate quite severe losses. It is said that the raisin crop is likely to lose 25% of a full yield, but that will leave more raisins than were gathered this year. The general impression has been that tree fruits and nuts would reach a maximum production in the upper half of the State; but there will have to be some concession made for frost work, as many localities have been severely hit. It is too soon yet to measure the output, but the frost must have done enough to favorably affect values of what remains.

Since the frosts a showery time has brought comfort to growers of field crops and pasture. The showers are welcome, for a dry April would have caused wide losses. It looks now as though there would be enough rain to give fair yields everywhere except south of the Tehachapi range. The south will have to be patient a little longer.

Spot wheat is stationary here and little doing, though the tone is steady. Wheat is firmer abroad and at the East. Barley also is slow; the old figures; another shipload has gone to Europe. Oats are unchanged. Corn is higher at the East and above shipping to this coast. There is considerable large white California corn, but the preference is for yellow. Hay is weak, except for fancy wheat, which is in demand at the low price prevailing. Bran is barely steady and other millfeeds unchanged. Hogs are firmer, but steady, and mutton rather weak. Butter is lower, but is selling well for packing, and the outlook for the best quality is thought to be good. There is too much soft California cheese offering, and Eastern is too high to be used in any quantity. Eggs have improved under the Easter demand, but the future is hardly assured. Two carloads of Eastern eggs are in and more are on the way, but prices are up at the East and shipments will cease for a time. Poultry is in good shape and in the main higher. Beans are firm and a good business is being done. Potatoes are coming too freely from Oregon, and there is pressure to clear up before new potatoes become too plentiful. Onions are very high. Three hundred crates of Australian onions went at auction to one buyer at 8½¢; good Oregon onions bring 6@6½¢. Oranges are selling

well, although receipts are heavy. Dried fruit is quiet, with a little movement from jobbers' hands; prunes are selling, but at no better prices. Wool is still on the anxious seat. Buyers are waiting for each other, and a break will precipitate free transactions probably.

As we anticipated, the week has been a busy one with the two great co-operative fruit selling enterprises—the prune and raisin associations. The directors of each of them are going ahead vigorously and are constantly mustering stronger support. Since our last issue there have been filed in Sacramento articles of incorporation of the California Raisin & Fruit Packing Company, with a capital of \$1,000,000. This means a fight to a finish between the Raisin Growers' Association and Commercial Packers. Of the capital stock \$200,000 is available for construction of packing houses and purchase of seeding plants, the cash to be had on a deposit of growers' slips authorizing a reduction of ½ cent per pound on the crop of 1900 for the association. The directors are also the directors of the raisin growers' combine. The new incorporation is also intended as a stimulus to hesitating growers to sign the association contracts to continue the combine. This year's crop is already in the combination's hands, and we hope it will be handled so well that the question of continuance may have only one side to it.

At San Jose the prune association has had a busy week and records a number of progressive points. At the directors' meeting on Monday it was clearly shown that the association is master of the situation. The records show that 35,433 acres of prunes have been signed to the association, also 2837 acres signed, but held by the trustee in escrow, making a total of 38,270 acres, which in the judgment of the Board of Directors exceeds 75% of the prune acreage of the State. As the packers' contract requires that the association shall have under its control 90% of the prune acreage by the 1st day of May, the time has been extended to the 30th day of April to secure the necessary 90%. The foregoing relates only to prunes. It is seen that there cannot be enough deciduous fruits and nuts, other than prunes, secured to warrant the association in fixing prices for this season. The growers who have signed contracts for dried fruits and nuts, other than prunes, are given the option to sell through the association or otherwise. The canvass on the prune basis is still proceeding in different parts of the State, and there is still time to get into the fold.

Horse circles are excited over the sale of Flying Fox at the sale of the late Duke of Westminster's racing stable in London—37,500 guineas, or \$191,600 in our money—the largest ever given for a horse in the world's history. It reminds a writer in the Oakland Enquirer of the fact that only four horses have yet sold for \$100,000 or over, and that the first one was the American trotter, Axtell, then a three-year-old colt. This was eleven years ago and his price was \$105,000 after he had made a record of 2:12. Axtell's price remained the world's record for two years. Then, in 1891, Governor Stanford of California came to the front with the two-year old Arion—who set the turf world agog by a series of record breaking miles, one in 2:10½. His feat sold him to J. Malcolm Forbes, the Massachusetts millionaire, for \$125,000, and again the price record for a horse was broken. In 1893 Mr. Macdonough of California paid \$150,000 for the English horse, Ormonde. Now Ormonde's grandson, Flying Fox, has brought \$191,600. Will an American trotter ever bring as much?

High prices for single horses leads naturally to the many horses which the United States are now sending out to the world. The export trade in horses has expanded wonderfully. A decade ago it was practically nothing. In January of last year the total footed up \$396,000, while for the January just passed our exports of horses reached a total value of \$634,000. This is a tremendous volume of business and would indicate a trade for the present year of somewhere around \$8,000,000. The total exportation of American horses for seven months ending January, 1900, comprises 27,286 head, against 21,436 horses for the same period in 1899 and 25,021 head for the corresponding seven months in 1898. A feature of the export trade is the wonderful increase of the exports to Africa, which, in January, reached the

enormous volume of 4972 horses, against 24 head for January, 1899. The export of horses to the Philippine Islands for January, 1900, was 398 head, against zero for January, 1899. The Hawaiian Islands took 117 horses in January, 1900, against 32 head in January, 1899. There has been a sensational expansion in the volume of exports of American mules. For January, 1900, there were exported 5759 mules, against 538 head in January last year. The export of mules for the seven months ending January, 1900, comprise a total of 22,264 head, against 4834 mules for the corresponding period in 1898, the former valued at \$1,947,214, and the latter at \$431,372. Evidently the wars are of advantage to the horse and mule growers, and the end of the wars will not end all, because the whole horse and mule supply is roaching a low point, and it will take a number of years to catch up with the demand. In connection with these considerations, it is interesting to note a telegram from New York as we go to press that a contract to buy 30,000 to 35,000 horses for the British Government was about completed Tuesday. The horses are for calvary regiments and the artillery service in South Africa, and they will cost several million dollars. This is said to be the largest single order of the kind ever placed in this country.

An issue has arisen between the Pasteur Vaccine Company and the Division of Animal Industry of the Department of Agriculture as to the equity of the free distribution of vaccine virus by the Government for private use, while the Vaccine Company is selling the virus after having made large investments in developing the material to its present state of efficiency and in making the facts known to the public by liberal advertising. We do not particularly desire to intrude in a fight in which the contestants are getting rather warm, but we have been requested to speak on the subject and do not hesitate to do so. We are quite sure that the Government need not pursue its distribution beyond proper experimental limits. It may be a question whether it was necessary for the Government to take this matter up at all, because the Vaccine Company had fully demonstrated the success of the treatment before the Government undertook its larger distribution, at least. Many Californians had attained such success with it that they freely commended it at Farmers' Institutes and other meetings. But supposing the Government should hold it to be its duty to make the very successful prevention method as widely known as possible to save the immense annual losses from blackleg, it should cease distribution as soon as this was fairly done and the supply of material for regular use should come from private business enterprises. There is no more reason why the Government should distribute virus for stock than quinine for stock owners after the curative efficacy of both are known. But at the same time, though perhaps the position of virus-making enterprises is well taken, we apprehend that they overestimate the injury the Government distribution may do their business. In our opinion the stock owners will prefer to secure their virus in a regular business way from a firm of established reputation than to wait upon the Government for it. This opinion is formed from our own personal experience with people who have consulted us on the subject. We have frankly told them the two ways in which the virus could be had and they have invariably remarked: "If you think the Pasteur Vaccine Company is all right, we would prefer to get supplies from them and hold them responsible for its character." The company sells the material at such a reasonable rate that no one need seek other supplies because of the cost. Our contention would be, then, that though, so far as we understand the matter, the private producer is right in opposing the Government distribution, he will not be injured by such distribution to the extent he fears and in fact may be benefited by the greater demand which may arise for the valuable material.

So Secretary Wilson is to have an experiment farm of his own which will do important field work for the Washington department. In the Senate on Tuesday Mr. Money reported from the Committee on Agriculture a bill setting apart a portion of the Arlington estate as an experimental farm to be operated under the direction of the Secretary of Agriculture, and it was passed.

QUERIES AND REPLIES.

Bleeding Prune Trees.

TO THE EDITOR:—I have French prunes which I grafted two years ago with the Imperial prune. A large number of the trees are bleeding and quite a number are dying, and more are going to die. What can be done, under the circumstances, in preventing the trees from bleeding and decaying?—GROWER, Monterey county.

The bleeding of deciduous fruit trees is due, so far as we know, to one of three causes: First, exceeding dryness of the soil or subsoil, which destroys the root hairs and induces gumming and die-back of the top. The remedy in this case is irrigation. Second, Standing water in the soil, which also kills the root hairs and induces gumming, though, of course, by a different process. The remedy in this case is drainage. Third, sunburn and the entrance of burrowing insects (also the prevalence of scale insects on some trees) induce bleeding and gumming, and if too extensive will kill the tree. The remedy in this case is whitewash or other means of protecting the bark from sunburn. Unthrif and gumming of the prune is apparently due in some cases to excessive heat, but this cannot occur near the coast. We have failed to find a case of bleeding and gumming which is not to be accounted for by one of the three groups of conditions. Perhaps the suggestion of them will enable you to make an investigation yourself which will satisfy you as to the cause of the trouble in your case.

Whitewash on Citrus Trees.

TO THE EDITOR:—Is there any danger to our citrus trees in using whitewash on the trunks? In budding over our large trees, it seems best to protect the body of the tree from being injured by the sun shining on it while it has little or no top to protect it. Some use whitewash, as, reflecting the sun's rays, it answers the purpose at least cost and trouble; but some are fearful that the action of the lime on the bark will be injurious.—READER, Pomona.

There is no danger in using whitewash on the bark of citrus trees, especially old trees, which are grafted over, because the bark is older and less liable to corrosion. As a matter of fact, however, whitewash is used upon the young bark of orange trees as well. In cases of budding, it is often advised to allow the whitewash to cover all parts of the bark to prevent burning by the sun. So much of this has been used for so many years that there is little doubt of its effectiveness and of its innocence as far as injury goes. If you wish to make whitewash that will stick better than the common sort, use thirty pounds of lime, and, while it is slaking, add four pounds of tallow and five pounds of salt, using water enough to slake the lime and make it of proper consistency for application. This preparation has been very widely used and has given good satisfaction.

Beans After Apricots.

TO THE EDITOR:—What would be the chances of a bean crop in Ventura county on land from which an old apricot orchard was cleared off years ago?—ENQUIRER, Los Angeles.

If the soil and situation are suitable for beans and there is moisture enough available this year, the bean crop will come all right. So far as the chances of soil exhaustion by the apricot go, the bean is the best plant we know of to face such chances, for it is endowed by nature, like other legumes, to take its strengthening food from the air, and this is the reason why beans often do well where other crops would fail and why the bean is a soil restorer rather than a soil robber. It is true that a change may occasionally help the soil even for beans, but there are plenty of cases where beans have been grown continuously during a long period and good crops are still had wherever the winter rains and the summer fogs give the plant a good supply of moisture and suitable growing temperature. We should expect a good crop on old cleared orchard land if you have moisture enough in the soil and in the air to carry a vigorous growth until the pods fill well.

Weeders or Shallow Cultivators.

TO THE EDITOR:—Have the "weeders" or shallow cultivators advertised so extensively at the East been tried in California? What is your opinion of their usefulness in this State for occasional use in orchards, etc.?—S. A. C., Los Angeles.

Weeders or shallow surface cultivators are not widely used in California, because in this dry country

we need a certain adequate depth of cultivation to prevent the evaporation of moisture. For this reason a disc running to a depth of 4 or 5 inches, or various forms of chisel teeth, are superior to the horizontal, shallow weed cutters. At the same time, these sharp horizontal cutting blades are very desirable for reducing morning glory, Johnson grass and other running seeds which are quite prevalent in some localities. Unless it is for the purpose of reducing these weeds it does not appear that the weeders are the right sort of tool for ordinary California conditions.

Bran and Arsenic for Grasshoppers and Cutworms.

TO THE EDITOR:—Is the amount of arsenic (20 lbs.) in the "Bran Remedy," in the book "California Fruits," for cutworms and grasshoppers correct, or is it a typographical error? Will cutworms molest bean plants? My soil, newly cleared, is full of these worms, caused, I am told, by decaying leaves and acorns. I want to grow a crop of beans among my young trees, but it is useless to attempt it if the worms are in the habit of cutting off bean shoots.—J. M. HARKINS, Edenvale.

The bran and arsenic remedy is correctly given in "California Fruits," viz: Bran, 40 lbs.; middlings, 15 lbs.; cheap syrup, 2 gallons; arsenic, 20 lbs. Mix these with water into a soft mush and put down a spoonful beside each tree or vine affected by cutworms or grasshoppers. Arsenic is cheap and you need plenty of it so that a little of the mixture will kill.

Cutworms will take beans in good shape; they are as good bean eaters as Bostonians. Cutworms are not caused by decaying leaves or acorns, though they may occur in connection with them. There are, however, plenty of other grubs on acorn ground. Perhaps you had better catch a few and let us see whether you really have cutworms or something else.

Harvest Flies and Crane Flies.

TO THE EDITOR:—Will you name the fly and worm, specimens of which accompany this letter? I find one or more of the flies on nearly every prune tree, and one or more of the worms in the soil underneath. The fly is often sitting by the ghost or shell of itself on the same twig.—ORCHARDIST, Santa Clara county.

You send two quite distinct insects. One is a "harvest fly," one of the "locusts" or cicadidae, its full name being Platypedia putnami. This is the wedge-shaped fly which you found sitting beside his own ghost, which is his cast-off skin. The larvæ of these flies occur on the roots of fruit and other trees, and draw the sap through the bark by their sucking beaks. They are fortunately not abundant enough to do great harm. The other fly is a crane fly, sometimes called a daddy-long-legs. The larvæ of these flies feed on the fine roots of plants and sometimes are abundant enough to do harm to grain. Both these insects are conspicuous and of formidable appearance, perhaps, but they are neither of them of much horticultural importance.

New Trees in Old Holes Again.

TO THE EDITOR:—Many thanks for your kindness in answering my queries. Can you not suggest some chemical to be placed around the roots of young trees planted where old trees have been taken out which will destroy fungus growths engendered by the old roots?—ORCHARDIST, San Francisco.

It is common practice to clear out old roots as well as they can be reached without too much digging and in some cases to refill the holes in planting the new trees with fresh soil, leveling the surface with the old soil. The only addition to this practice is to sprinkle a little bluestone sparingly in the old hole. This might repress fungus growth on the old roots for a time, but the same material in excess would injure the root growth of the new tree. By using a tree puller when the ground is moist a maximum amount of the old roots can be withdrawn, and this is about all that can be done without too much cost. No surface application of any clear value is known.

Native Maidenhair Ferns.

TO THE EDITOR:—I live along the banks of a river, and the hills which skirt its southwestern bank grow the fern very profusely. I desire to pot them for sale, but so far have been unable to make them live and grow after transplanting.—DAUGHTER OF AN OLD SUBSCRIBER, Auburn.

Take up the roots when dormant at the close of the dry season, divide and remove all top growth.

Pot in a mixture of leaf mold and sand, and when the new fronds start keep in a warm, partly shaded place and water freely, but not excessively.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 9, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

SACRAMENTO VALLEY.

The temperature has averaged a few degrees below normal, and the nights have been somewhat cooler, with heavy frosts Monday morning. The rainfall on the 2nd and 3rd was heavy in some sections and was accompanied by hail in portions of Butte county, slightly damaging apricots, almonds and tender vegetation; oranges were not injured. Grain continues in fine condition, and the prospect for a heavy crop improves each week; in some localities it is predicted that the yield will be larger than at any time in the last twenty years. Green feed is abundant, and stock cattle are in prime condition. There will be a heavy crop of hay in all parts of the valley.

Deciduous fruits have not been injured by frosts or high winds, but some varieties, notably prunes and Bartlett pears, are said to be dropping badly. Vineyards are advancing and look promising. Almonds are nearly full size, but are still dropping in some orchards.

COAST AND BAY SECTIONS.

Nearly normal temperatures have prevailed during the week, and conditions have been favorable for the growth of grain, hay and fruits. Rain has fallen in nearly all sections, greatly improving the condition of crops. Some localities report light frost, but no injury to deciduous fruits has thus far been reported. In the northern counties grain and hay are in excellent condition, and prospects continue good for large crops; portions of the southern counties received heavy showers and crops were greatly benefited; but in other places the rainfall was very light, and grain is said to be suffering.

Deciduous fruits are advancing satisfactorily and have not been damaged by high winds or frosts. With favorable conditions, the yield will probably be larger than last season's. The almond crop will be light in some sections.

SAN JOAQUIN VALLEY.

Generally cloudy and cool weather prevailed during the week. The rains of the early part of the week were very beneficial to crops. The early sown crops are in good condition, but more rain is needed for the early sown grain.

Severe local hail storms occurred in some portions of San Joaquin and Stanislaus counties, doing much injury to almond orchards, vineyards and alfalfa. Near Lodi the hailstones damaged deciduous fruit in an area half a mile wide and three or four miles long. Some almond orchards were nearly destroyed; young grape shoots knocked from the vines and trees stripped of their leaves. Early sown grain is heading and filling well. Haying has commenced in many sections. Fruits are coming on rapidly and prospects are for a fine crop. Strawberries are being marketed. Summer-fallowing continues. Brisk north winds are reported on several days, but no injury resulted. Conditions in the southern portion of the valley are very much improved. Heavy frosts occurred Monday morning generally throughout the valley.

SOUTHERN CALIFORNIA.

Cooler weather has prevailed during the week and light rain has fallen in most sections. In some portions of the foothill country the rainfall was over half an inch, and there was a considerable fall of hail in Orange county, but no damage resulted. In the vicinity of San Diego frequent showers are said to have materially improved crop conditions. Reports from the Los Angeles district are less encouraging. Very little except feed and hay can be expected from the grain fields, and not even that in some places, unless heavy rains come soon. It is predicted that there will not be a thresher in operation this season.

Walnut trees are coming into leaf. Apricots are said to be about equal to last season's, but no better, and are dropping badly in some places. Citrus fruits continue thrifty.

LOS ANGELES SUMMARY.—Cool, cloudy week with showers, closing with high winds. Rain helped grain and hay in places, but was generally too late to save crops. High winds did much harm. Apricots are dropping badly.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, April 11, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Minimum Temperature for the Week.....	Maximum Temperature for the Week.....
Eureka.....	.84	45.10	31.55	38.22	36	68
Red Bluff.....	.04	20.07	19.37	23.44	42	80
San Ramon.....	.11	15.92	13.91	17.72	40	74
San Francisco.....	.07	17.47	15.38	20.45	46	81
Independence.....	.02	7.31	6.76	7.69	38	78
San Luis Obispo.....	.00	2.78	1.16	4.46	34	58
San Luis Obispo.....	.00	15.10	14.77	16.02	34	62
San Diego.....	.01	5.68	4.79	15.88	40	74
San Diego.....	.01	3.38	4.58	8.81	46	66
Yuma.....	.00	0.79	1.34	2.80	42	80

STATE BOARD OF AGRICULTURE.

California Agriculture in 1899.

NUMBER VI.

Report of the State Board of Agriculture, specially furnished for advanced publication in the PACIFIC RURAL PRESS.

BEEF CATTLE.

A satisfactory census of the beef cattle in California is difficult, if not impossible to obtain. No association of breeders of this class of cattle exists in this State, and the only available figures are those obtained from the assessors of the various counties. These figures are very much under the true ones, for various reasons, one of which is the natural conservatism of owners when making estimates for purposes of taxation. These returns show that on March 1st, 1899, there were 463,536 head of beef and stock cattle in the State. The figures for 1898 were 487,742, showing a falling off of over 24,000 head, which is probably very much under the actual number, and certainly indicates, as does the high price of beef and other circumstances, a short supply of beef cattle. This shortage, however, is not alarming, will probably not result in a further increase in the price of beef, and does not indicate the advisability of hastily engaging in the cattle business for those not properly situated or qualified for such an enterprise. There is a considerable shortage of beef cattle all over the United States, caused chiefly by the great industrial depression of the last few years, causing an under consumption and low prices, which discouraged breeding; by a succession of severe winters, causing great losses on the Western ranges; by the recent active foreign demand, and by the previous demand during the Spanish war. This Eastern shortage is not alarming and will be recovered from without disturbance. Some of the above causes contributed to our shortage, but the dry year of 1898 was the chief cause. In considering our cattle supply, it must be remembered that we naturally draw upon the cattle of Oregon, Nevada and Arizona, which must always be considered in estimating our beef supply. Another and very important question to consider in this regard is that we can make up a cattle shortage in this State, by breeding and natural increase, more rapidly than in most any other country in the world. We have no cattle plagues, we have no blizzards, we have no heat or cold that destroys the young or feeble animal. On our good ranges in our mild climate, old cows continue to breed regularly and calves nearly all live, mature rapidly and come into breeding early. In view of these facts, our beef shortage may be viewed without concern, and these facts should be pondered upon by prospective breeders before engaging in that business.

The raising of beef cattle here differs materially from the conditions which prevail on the Western ranges or the stall feeding of the middle Western and Eastern States. A great proportion of our cattle are produced in the northern part of the State, where they range in the mountains and in southern Oregon. They are taken in the winter to the great meadows in Siskiyou, Modoc, Lassen and Shasta counties where quantities of hay were cut during the summer, and fed until spring. They can be marketed at any time, from the rich ranges in summer, of the feed lots in winter. In central California the bulk of the cattle are ranged in the foothills and mountains in summer and wintered in the Sacramento and San Joaquin valleys. They are marketable off the spring grass or in the fall, before entering upon the short feed of winter.

Another great source of cattle supply is the lower San Joaquin valley, particularly in Kern county. Great numbers of cattle are bred here and fed along the river bottoms and upon the large irrigated alfalfa fields. The feed and conditions there produce prime animals which are in condition for market at all times. Large numbers of cattle are brought here from Arizona, fed and finished for market. The southern coast counties produce a large number of beef cattle which range throughout the year in the fertile valleys and low lying hills which prevail there. This condition of affairs has proven satisfactory, but is bound to change. As the ranges are narrowed and put to other uses, our beef will have to be produced within narrower limits. With the extension of beet growing, ranges will be cut up, but cattle can be fed on beet pulp; with the reclamation of overflow lands, and the development of irrigation, the alfalfa area will be greatly extended, and that probably most valuable of all forage grasses will be fed on smaller farms to high bred steers. Other conditions will combine to increase the number of cattle fed in the valleys and on small farms.

The type of animal bred by our beef breeders is not as high as it should be, but is constantly and rapidly improving. Very few grade sires are now used on our ranges, and in all parts of the State will be found pure bred bulls of some of the recognized beef breeds, chiefly Shorthorn and Herefords, but with a representation of Polled Angus, Red Polls and Devons. As a result of this, the type of our range cattle will compare favorably with the class of cattle bred and stall fed in the middle Western and Eastern States.

There is a good field here for the breeding of pure

bred, high class beef herds. The choice stock from such herds can be readily sold for breeding purposes at good prices, and the less meritorious animals profitably sold for beef. Breeding stock from California is in good demand and sells in all of our adjoining States. We have an under supply of choice pure bred beef cattle for breeding.

In this connection it would be well to note that at the State Fair of 1899 nearly all of the prizes for beef animals went to the Herefords of John Sparks of Reno, Nevada, and to the Shorthorns of Joseph Marzen, of Lovelock, Nevada. Mr. John Sparks also swept the ring on two previous years. These animals are splendid specimens of their breeds, fit to show anywhere on earth, but the conditions here are such as to permit of equaling, if not excelling them, and our breeders should not long remain second to Nevada as producers of the highest type of beef animals. It is to be hoped that when these splendid animals come again to our fairs they will find California cattle fit to dispute their supremacy.

TEXAS OR SPLENETIC FEVER.

This disease exists in some portions of the State and probably cannot be eliminated. When its existence and the territory in which it exists is well known it can do little harm. It in nowise menaces the public health and need not result in the loss of any cattle. Cattle bred in the infected districts are immune, but if sent into Northern herds will carry the disease, which will destroy the animals it attacks. Northern cattle sent into the infected district will likewise become infected and will most likely die. These conditions are met by not mingling these cattle except when breeding stock from either section is required by the other. Southern animals can be sent North with impunity during the coldest of the winter season, or after being disinfected by a dipping process at other portions of the year. Breeding animals can be sent South when very young with considerable safety, and the vaccination of older animals is now meeting with some success. Southern animals can be sent North for slaughter in disinfected cars, under proper regulations, without danger. Our chief concern is to prevent the shipping of infected cattle North, where they can contaminate uninfected districts, and we are pleased to note the creation by the last Legislature of the office of State Veterinarian, to which you appointed a capable and vigorous officer. Should he succeed in maintaining the transtate quarantine line proclaimed by your excellency, this disease, which if not controlled could do inestimable damage, need give our cattlemen but little further concern.

(TO BE CONTINUED.)

FLORIST AND GARDENER.

Sacramento County Strawberry Growing.

G. Cox of Florin furnishes the Sacramento Bee an account of the berry business, which will be read with keen interest by the other small fruit growers of the State:

SITE AND SOIL.—Florin is to-day the largest strawberry shipping point in the State, if not in the world, territory considered. Nature has done much toward bringing about this happy condition, for the land in this section is peculiarly fitted for the culture of the berry. It is a reddish loam, very shallow, in many places not more than two or three feet deep, with a hardpan underlying it from two to six inches thick, and impervious to water. This hardpan resembles pipe clay somewhat, and is richer even in plant food than the soil itself. It readily disintegrates on exposure to the air, though, if not disturbed, it holds above it all the moisture received from rainfall or irrigation. This shallow soil is much better adapted to berry culture than a deeper soil, as the results attest.

Below the hardpan referred to is moist sand and a plentiful supply of water. It is an undisputed fact that this land offers for berry culture better advantages than any other kind of soil in the county.

VARIETIES.—Among the twenty odd varieties that are at home in this soil, but four have a commercial distinction, namely, the Dollar berry, Jessie, Marshall and Triumph.

The Dollar berry is said to be the coming berry. The Jessie is the most prolific, but not as good a shipper as the Dollar variety. The Jessie has been known to yield seven tons to the acre. Last season Will Taylor harvested twenty-one tons from six acres of Jessies, which sold for \$2870—an average per acre of \$478.30.

GROWERS.—The following is a very complete list of the growers who have helped to bring Florin into the front rank as a shipping point. The acreage of each grower is also given: W. H. Wason, 24 acres; Peter Raemer, 22; Fiel & Omori, 15; Alfred Tatsumi, 12; C. May & Bro., 12; Alfred Williams, 10; K. Hashimoto, 9; Matsura, 7; C. Tarrada, 6; Will Taylor, 6; Chas. Lea, 6; Will Dean, 6; K. K. Thaler, 5; J. H. Cooley, 5; W. G. Artz, 5; T. E. Davies, 5; W. W. Theobald, 5; K. Nakamoto, 4; K. Nishimoto, 4; K. Teller, 4; J. Miami, 4; Carl Baurlic, 4; Joe Wegener, 4; O. C. Smith, 3½; L. C. Steward, 3; D. Finch, 3;

Joe Jackson, 3; P. Kramer, 3; R. Larson, 3; Karmota, 2½; John Schofield, 2½; Sam Kennedy, 2; Will Kennedy, 2; Mrs. M. McNie, 2; Geo. Carlisle, 2; Ed Casey, 2; Abraham Troutman, 2; Adam Troutman, 2; Jake Musacchia, 2; Jas. Tootell, 1½; W. Trask, 1; W. F. Peterson, 1; Oswald & Shinagawa, 1½—a total of 227½ acres in bearing.

New plants have been set out this spring as follows: Takahashi & Co., 21 acres; Miami & Davies, 10; Barmby & Son, 10; E. Oppenheim & Co., 10; Oswald & Shinagawa, 9; Karmota, 5; Nishimoto, 2½; C. May & Bro., 12; Yamanaka & Wason, 6; Omori & Fiel, 5; Yamashita & Co., 4; J. Faulkenstrom, 1; O. C. Smith, 1; Frank Robinson, 2; J. H. Cooley, 4; Chas. Buell, 4; Chas. Lea, 1—a total of 107½ acres of new plants, errors and omissions excepted.

It is not recorded in the history of this industry in this section of such a large additional acreage in any one year as that given above. This is an increase of 50%, yet it is safe to say that we can continue the above ratio for some time to come, and still the supply will not meet the demand. This fact was fully demonstrated last season, for, with an output of 40,000 cases, the leading shippers were seldom able to fill, in full, the Portland, Or., orders. The demand always exceeded the supply.

ADVANTAGES.—That the strawberry business is safer and more profitable than raising Tokay grapes goes without saying. The strawberry grower is, as a rule, better fixed financially than his unfortunate Tokay-tangled neighbor. His product finds a market here at home, and the commission man has not the chance to "skin" him, as in the case of the Tokay grower.

It will be noticed that the Japanese are going into the business quite extensively, and it is claimed by some of the expansionists that the time is not far distant when it will be a novelty to find a white man raising strawberries for the market. Statements of this kind, however, must be taken with considerable salt.

At this writing conditions point to a larger crop than has ever been harvested in any one year in this section. Providing the weather prophet acts considerably, the output will reach 50,000 cases—375 tons. The output for last season was over 40,000 cases, to which must be added a 25% increase in acreage—that is to say, the acreage in bearing this year is 25% larger than last season.

This season will be some fifteen days later than last season, which, it will be remembered, commenced on the 1st of April and continued without interruption to the 1st of June, at which time the Oregon berries came into market. The advent of the Oregon berry in the market puts a quietus on the shipping from here in large quantities—that is, in carload lots, which is the usual way of shipping during the season.

The Utah berry, which usually comes into the market some ten days earlier than the Oregon berry, does not affect our shipping to any great extent. Large shipments are made to points south in the State every season, these shipments continuing to the end of August.

The principal shipping points are Ogden and Salt Lake, Utah; Cripple Creek, Colo.; Butte, Helena, Anaconda and Great Falls, Mont.; Portland and Salem, Or.; Tacoma, Seattle, New Whatcom and Port Townsend, Wash. Portland is the distributing point for the Willamette valley, southern Oregon and Puget sound, and is, therefore, our best market.

THEN AND NOW.—In 1893 the output was in the neighborhood of 8000 cases. The prices averaged 6½ cents per pound, or \$1 per case. At that time the Jessie and Triumph were the leading varieties. Previous to 1890, a patch of two acres was considered large. The cultivating, picking and packing was, to a large extent, done by members of the families of the growers.

It has been asserted time and again by shippers that the Jessie berry (or any berry of like character for that matter) cannot be shipped to distant points and arrive in good condition. This theory has been exploded by L. C. Steward of this place, and he demonstrated also that it pays to pack none but perfect fruit. Mr. Steward says: "If the Jessie berry is properly handled, it can be shipped to any northern point, and will arrive in as good condition as the Triumph."

This is not an argument for or against either of the two berries named, but merely to show that care in picking and packing pays. In the early part of last season, which proves the above assertion, Mr. Steward received \$5 per case for Jessies in Seattle, while the Triumphs sold at the same date for \$3 per case.

What Women Can Do in Vegetable Gardening.

By MRS. J. H., Before Cucamonga Pomological Club.

At this time of year our minds naturally turn to gardening, whether it be in the flower or vegetable line; and of all the necessities of the ranch, one of the greatest is the vegetable garden. To be sure, it requires constant attention, and a great deal of it, but the pleasure and comfort of having fresh vegetables constantly at hand repays many times the labor spent on them. The woman on the ranch certainly has plenty with which to occupy her time; but

if she once tries to raise some of the vegetables for her own table, especially those that will not permit of exposure to the heat of the sun for half a day (or even a few hours) she will always insist on the proper attention being paid to the garden at the right time of year.

WHAT A WOMAN CAN DO.—The first requisite of a successful garden is the presence of a woman who says she will have such a possession on the ranch, and who makes her presence felt to such an extent that the man on the ranch begins to feel that the one thing in life worth having is a vegetable garden. To secure such a thing, together with peace in the family, he must see that the ground is fertilized, plowed and inclosed with a fence to keep chickens, rabbits and the stray cow from devouring tender plants. If one has succeeded in having her garden a year, and has raised successfully her own lettuce, radishes, tomatoes, melons, beets and turnips, the male members of the firm will not require so much reminding the following season that it is time to fertilize the garden, when the much coveted pile of stable manure is seen to be slowly but surely disappearing into the orchard. It is useless attempting to raise vegetables without plenty of this fertilizer. As the wise before us have said, "If you starve your vegetables they will starve you."

Short or well rotted manure is the best for spring use, as it will mix more readily with the soil and is in the best condition for forwarding the young plants. Long strawy manure, plowed or dug in late in the fall will assist in keeping a heavy soil loose and open. A dressing of stable manure should be applied each year, although the practise of alternating with a commercial fertilizer is followed by many gardeners. Some authorities advise a light dressing of air-slaked lime about once in three or four years. From two and one-half to five pounds of the lime to each 100 square feet of surface will be sufficient.

The success of a garden depends a great deal on its location, a southern exposure being preferred; but good manuring, sufficient irrigation and thorough cultivation will give excellent results in less favorable locations.

WHAT TO GROW.—If the family be fond of asparagus, do not fail to have a small bed of this vegetable, as it requires but little attention and yields abundantly for two or three months during the spring and early summer. During a favorable season when there is sufficient rainfall, the bed will need only a proper dressing, which should consist of rotted manure and common salt—four quarts to each 100 square yards of bed—and a cultivation which can be done in a short time with a forked hoe, after each shower. The thick dressing keeps the bed in such a condition that it is very easily cultivated. When the bed is wet artificially, it should be banked on the low sides and thoroughly flooded for four or five hours.

As the days commence to shorten is the time to think of sowing peas for winter use. Irrigate and prepare the land in October, as near the middle as possible, so that the peas will set and mature before Christmas and then the full benefit will be derived from them before heavy frosts are expected. The past season has been a favorable one for raising peas, as there have been no frosts to injure the pods. The American Wonder is a bush pea and matures in a shorter time than any other known, so is an excellent variety for fall planting. From two pounds of the American Wonder seed, planted last October, I have picked since Christmas seventy-five pounds; and, if the vines had not been disturbed by stock, would be able to pick a few pounds more. In selecting a place for raising winter peas, it is necessary to choose a place that is not shaded, as the pods fail to mature well or quickly without the direct heat of the sun.

In all vegetable gardening, the hot-bed, in some form, is indispensable and it is time now to prepare it. The only plants that I start in this manner are the tomato and chili; they can be started in boxes and covered with old window sashes or pieces of glass to encourage their growth and to protect from frost. This is much simpler than making hot-beds. It is well to transplant into flower pots, or if they are not at hand, into unsoldered tin cans, as in this form they can be transplanted for the last time without disturbing the roots.

HOW TO GET HELP.—Woman's hardest work is not the actual labor of caring for the garden, but in influencing her other half to perform his part cheerfully and at the right time! After a promise has been secured from him, he is not to be trusted too implicitly, but must be accompanied to the spot—no matter what is waiting to be done in the house—and engaged in pleasing conversation while his work is progressing. Taking into consideration the old saying that, "The way to a man's heart is through his stomach"—when it is time to prepare beds for beets, radishes, turnips, lettuce and other vegetables that require very rich soil, the woman's work then is to bring to mind the tender and much appreciated vegetables of the season before.

In making hills for planting bush or pole beans, the soil should be removed 4 or 6 inches in depth and 12 inches in diameter. Place one or two shovels full of well rotted manure in the hole and cover well with the fine soil just removed. The seeds are then planted and covered with more light soil. Hills prepared in

this manner are also an excellent preparation for tomatoes and chilis. I have found that it does not pay to plant cucumbers or melons too early, for they make very little growth if the weather is at all cold, and will, more than likely, become unhealthy plants.

PESTS.—Watch carefully for cutworms, and destroy them bodily. If you find they have begun feeding on a hill, go to the place early in the morning and dig all around in the hill until the offending worm or worms are found; it will take patience, but is the only sure way of destroying the pest. An able-bodied, self-willed woman can, under urgent necessity, perform most of the labor needful in the garden, but on the approach of the cutworm, man's help is indispensable, for the soul of woman at this destruction rebels. After a careful consideration of the foregoing, we find that the three requisites of a good and successful garden are—Woman, Work and Water.

HORTICULTURE.

Unfruitfulness of the Olive.

By B. M. LELONG, Secretary of the State Board of Horticulture, in a pamphlet on the olive, just issued.

The question of the unproductiveness of the olive tree in certain localities is at present agitating the minds of many growers throughout the State; several orchards, although old enough to bear, not yet having given remunerative returns, and others that bloom profusely but only setting few fruits, being cited as instances. The behavior of the olive in this respect is not new, has been understood for ages and is due to many causes, but primarily to the improper management of the tree, imperfect bloom, deficient pollen, the ravages of the black scale, propagating from unfruitful sorts, and lastly to weakened fruit buds caused by excessive spraying with strong caustic and crude oily materials, and fumigating with gases too strong for the buds. While spraying and fumigating at times become essential for subduing the black scale, to which the tree is subject, especially in the coast regions or in localities of humid atmospheric conditions, unless used with moderation and applied at the proper time, they cause the weakening of the fruit buds and retard their fruiting power. In my investigations I have often found olive growers spraying either at the wrong time or with materials that not only injured the buds very materially, but had no effect whatever on the insects. Such condition of affairs exist everywhere, and the trees are treated from one to three times a season. Can it be wondered, then, that the trees fail to set their bloom with all these hindrances, rather than being encouraged in healthfulness, looking toward a profitable production?

Buds weakened by any cause put forth weak peduncles, which wither and lose hold before the flowers that are attached to them have developed. The flowers also develop unnaturally, lacking fertilizing power, and either wither and fall before fertilization takes place, or never open, thus failing to set the fruit.

Trees grown from seed have a tendency to revert to the wild type, or a type entirely distinct, some of which fruit, while others seldom do. The character is also changed by pollen impulse.

CUTTINGS FROM STERILE TREES.—There are a great many trees distributed among the Missions throughout the State that for natural, unexplained causes have never as yet produced fruit in any quantity, the tendency of the trees being to throw their growth to foliage instead. Many orchardists seeking stock for propagating purposes planted cuttings in large numbers from such shy-bearing trees, and trees grown therefrom have been distributed indiscriminately throughout the State. Such trees have proved a great disappointment, for they have not yet produced fruit to pay for their culture, and no doubt never will, at least their parents do not.

SHY-BEARING VARIETIES.—Almost every variety of olive known to the Old World has been imported into the State and planted indiscriminately before the fruiting qualities were tested or the adaptability to our soil and climate shown. Several of these have not yet produced fruit in any quantity, while others are very shy bearers. Many of these varieties fruit for a while when the trees are young, but, on becoming older, seem to degenerate and cease to bear fruit, the branches dying in the center and the energies of the tree being wasted in the production of growth rather than of fruit. Some of these varieties are also deficient in sexual strength of the bloom, not having the fertilizing power essential for the setting of the fruit. For several seasons I have observed in orchards in many portions of the State little clusters of berries about half the size of peas. On opening these berries the inside was found to be full of a gumlike substance, and without a pit, showing deficiency in pollen strength. Other berries, about the same size or larger, with pits, being the result of late blooming. In many such trees clusters of dried up blossoms are often found without any visible pollen in the flowers, which had died for want of fertilization. The behavior in the fruiting of the greater portion of the olive varieties so largely introduced has yet to be studied

and experimented upon. That all varieties, irrespective of the climatic and soil conditions of the locations from which imported, planted in a locality with conditions entirely dissimilar, should be expected to become eminently successful, has long ago been proven to be a fallacy.

THE MISSION.—With regard to the Mission olive, its non-bearing character is easily understood. It requires, above all things, to be kept in as clean and thrifty condition as possible. The black scale must be freed from it, and the trees must be properly fertilized and cultivated. Once the tree becomes infested with the black scale the smut produced from the excrement of this insect will cover the breathing functions of both leaf and branch, and the tendency of the tree will then be to leaf growth instead of to fruit. The tree, however, may bloom profusely, but, being sensitive to the fungus, the stems to which the flowers are attached become weakened, lose hold, wither and drop before fertilization takes place. These natural conditions no doubt also apply with equal force to other varieties. Pruning to encourage the formation of fruit-bearing wood also becomes very essential.

WHY THE OLIVE FAILS.—Aside from the causes already mentioned, are the following reasons why the olive fails to produce a crop in paying quantities:

1. Unsuitable soil selection, not naturally well drained, having a strata of hardpan, or clayey, uncongenial conditions for roots too close to the surface. Soil not of ample richness; of too high or too low altitude.
2. Planting on sites too much exposed, without giving the trees protection by planting others to serve as windbreaks, etc.
3. The existence of a frost line. Frost during the blooming period is very detrimental to the setting of the fruit, and in the fall and early winter to the fruit, especially during its tender period or first stages of ripening.
4. Planting varieties of indiscriminate selection, without regard to locality, adaptability, or the suitability of stocks used, etc.
5. Planting trees too deep or too shallow, which everywhere has proved a grave mistake.
6. Planting too close. Trees, after becoming large, require abundance of soil, of which there is not enough for the roots of all. Also, the shade from adjoining trees is very detrimental.
7. Lack of fertilizers—failing to supply the elements of nutrition needed to supply the healthy growth of trees, that the particular soil may lack, whether in a virgin state or after the growth of trees has exhausted same.
8. Want of proper pruning, such as the trees may need under varying conditions, especially to encourage fruit-bearing wood.
9. Injudicious cultivation, such as cutting the fibrous roots just before a dry spell, or during blooming time.
10. Want of cultivation, allowing the weeds to grow, when the tree roots should have the soil to themselves, especially in dry weather, or allowing the soil to become dry after plowing, without breaking up the clods and pulverizing the ground.
11. Endeavoring to get two or more crops out of the same ground by growing other plants between and more or less close to the trees, which is detrimental to both.
12. Allowing the trees to become infested with the black scale, the fungus produced by the excrement of which clogs up the breathing functions of the tree and retards the growth of both tree and fruit.

Phosphates Possibly Needed.

TO THE EDITOR:—I note in your last week's issue several reports of the dropping of almonds and peach buds. These reports come from different localities, and it may be that they arise from different causes; but, according to some authorities, this is an indication of a lack of sufficient phosphoric acid in the soil, and I would suggest that your correspondents experiment next fall with an application of phosphates in any of the common available forms, such as superphosphates, Thomas phosphate powder, etc. The results, of course, would not be evident until the next spring, but it seems to me that it is a case of prevention being better than cure.

Oakland.
READER.

THE SWINE YARD.

Progress of the American Hog.

The present agitation in Germany for the exclusion of American meats lends a special timeliness to the appearance of a monograph of the Treasury Bureau of Statistics on "The Provision Trade of the United States." This monograph, which appears in the monthly summary for February, is one of a series of articles dealing with the production, distribution and consumption of American staples, and especially with their transportation within this country.

The development of swine and cattle raising in the United States presents features of peculiar interest. The United States has already achieved a unique

position among swine raising countries, with a total of more than one-half of the world's supply of swine. The discussion shows that the development within the country has consisted chiefly in a movement from the East to the West, following the broad course of the corn belt, and that this westward movement has been to a still greater extent true of the horned cattle of the country.

The great growth of our swine raising industry has been of the utmost importance to the farmers of the country, since it has furnished them an outlet, otherwise difficult to obtain, for their surplus corn. The hog has become not only a converter, but a condenser of values, and as such has sought out Eastern and European markets in cases where it would have been quite unprofitable to transport corn.

The development of swine and cattle raising has been also influenced by the phenomenal growth of the packing industry of the country. This evolution presents features of interest from the time when in Colonial days primitive packing was carried on in New England down to later times, when, about 1820, the prototype of the modern packing house was established in Cincinnati. In those days Cincinnati possessed peculiar advantages for this industry. Adjacent to the corn fields of Ohio, Indiana and Kentucky, Cincinnati possessed the further advantage of being on the Ohio river, down which her packed products were shipped to New Orleans, to be reshipped to Philadelphia, New York and Boston. The westward movement of the center of the corn belt, however, and the successful competition of the east-bound railroads with the long, devious and uncertain Mississippi route, gave to Chicago in the early '60s an immense advantage and achieved for that city a preeminence which it has since maintained, although Kansas City and Omaha are now rapidly forging to the fore.

The monograph under consideration traces this development of the packing industry down to the present time. It also gives statistics of winter and summer packing at various centers, together with receipts and shipments of live animals and of provisions, as well as statistics of the routes by which they are received or shipped and of their source or destination.

A detailed analysis is made of our foreign trade in live animals and provisions and statistics for the last ten years are furnished, showing the changes in the ports of exportation or in the country of destination. The article further contains tables on the French and German importations of meats, showing the effect of the policy of restriction in the early '80s, and considerable space is devoted to the treatment of the British market for provisions. The monograph concludes with a series of tables, showing the statistics of cattle, sheep and swine for a number of years in all the principal countries of the world.

The United States is now the world's greatest producer and exporter of meats, which form one of the most important features of our export trade. In 1887 the total exportation of provisions and live animals was \$102,774,910, and in 1899 their total was \$207,105,637, having thus doubled meantime and forming in 1899 17.2% of the total exports of that year.

FRUIT MARKETING.

Horticultural Statistics of 1899.

Gen. N. P. Chipman, chairman of the committee on industrial resources of the State Board of Trade, presents in his tenth annual report an industrial review of the State, the preparation of which is a great public service on his part. We imagine it is intended largely for use in connection with the display of the State at the Paris Exposition, and it is eminently satisfactory from that point of view. It passes in review all branches of our productive industry and the work has been pursued with great care and fidelity.

In order to continue our series of Gen. Chipman's annual reports of exports of fruits and vegetables and their products, we present below the tabular statements in those lines at this time:

When Horace Greeley visited California in 1859 he saw enough in the vicinity of San Jose to inspire him to make the prediction: "Fruit growing is destined to be the ultimate glory of California." But it was not in his thoughts then that in a few years California would be the chief source of supply to the whole United States for the raisin, the prune, the orange and lemon, and that the prune and raisin of California would invade the markets of Europe. It was not then in the prophetic soul of any one to conceive of California wines being found upon the tables of royalty in old wine growing countries, and no one dreamed that the almond and the walnut of commerce were to come from the far-off Pacific coast. Nor was it then supposed that the almost sacred olive tree should find a home here, and that to California must the people look for pure olive oil. But these things have come to pass, and fruit growing is not destined to be but is the glory of California.

I cannot take the space necessary to explain in detail where, how and under what conditions our orchards, vineyards and gardens are built and managed. The table of shipments given below indicates

GENERAL SUMMARY AND COMPARATIVE TABLES OF SHIPMENTS BY RAIL AND BY SEA OF FRUITS, WINE, BRANDY AND VEGETABLES FOR TEN CONSECUTIVE YEARS—TONS OF 2000 POUNDS.

KINDS.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.
Green deciduous.....	31,042.0	50,548.9	59,374.5	80,112.3	90,692.2	66,254.8	57,638.3	72,350.2	69,732.2	96,843.6
Citrus fruits.....	34,306.6	48,921.4	34,857.5	80,757.0	58,064.0	115,825.5	99,156.0	98,547.0	180,658.9	131,916.8
Dried fruits.....	32,207.5	32,919.0	29,762.2	45,386.2	51,828.2	61,386.4	48,522.8	75,159.7	76,662.7	86,925.3
Raisins.....	20,560.1	23,779.1	26,673.4	37,409.9	46,054.4	46,390.1	34,434.6	39,065.8	47,769.3	36,008.7
Nuts.....	787.1	1,358.9	2,061.9	1,796.5	3,953.5	3,234.7	4,972.6	5,808.6	5,815.8	6,608.4
Canned fruits.....	40,060.0	32,395.0	55,273.7	31,626.3	60,352.6	41,395.5	45,546.9	73,464.7	52,219.7	75,240.0
Carloads fruit by rail and by sea.....	16,195.7	18,692.2	20,800.3	27,708.8	31,274.4	33,547.2	29,026.7	36,439.6	43,288.6	43,344.3
Carloads vegetables by rail.....	none	none	none	6,978.4	4,276.6	8,613.6	1,130.6	4,243.8	3,045.6	2,613.6
Carloads vegetables by sea.....	reported	reported	reported	none	410.0	40.0	487.7	490.8	831.4	790.7
Carloads wine and brandy by rail and sea.....	reported	reported	reported	6,620.9	7,663.5	8,056.8	7,609.0	6,897.8	9,014.0	8,713.9
Carloads fruit, vegetables, wine and brandy by rail and sea.....	16,195.7	23,347.3	25,632.8	40,928.5	43,621.7	45,257.4	38,254.0	48,072.0	56,149.6	55,482.5

SHIPMENTS OF FRUIT OUT OF STATE BY RAIL IN 1899, SHOWING TERMINAL POINTS OF SHIPMENT. TONS ON 2000 POUNDS.

PLACE OF SHIPMENT.	Green Deciduous.	Citrus.	Dried.	Raisins.	Nuts.	Canned.	All Kinds.
<i>Northern California.</i>							
San Francisco.....	47.0	7.0	6,336.0	317.0	382.0	18,901.0	25,990.0
Oakland.....	2,399.0		379.0	3.0	173.0	5,811.0	8,765.0
San Jose.....	17,460.0		32,538.0	41.0	81.0	8,915.0	59,035.0
Stockton.....	13,242.0	3,550.0	19,443.0	32,161.0	264.0	3,937.0	72,600.0
Sacramento.....	53,951.0	374.0	9,485.0	619.0	87.0	7,328.0	72,614.0
Marysville.....	6,423.0	1,967.0	7,377.0	365.0	162.0	7,507.0	23,801.0
Total tons.....	93,522.9	5,898.0	75,558.0	33,509.0	1,949.0	52,399.0	262,835.0
Total carloads.....	9,351.2	589.8	7,555.8	3,350.0	191.9	5,239.0	26,283.5
<i>Southern California.</i>							
Los Angeles.....	175.3	48,872.1	4,053.6	560.9	3,320.7	10,230.9	67,231.6
Orange Co.....	15.5	7,812.5	1,354.6	67.3	1,298.7	452.2	10,870.8
Riverside Co.....	78.0	26,211.8	400.0	199.1	10.0		26,838.9
San Bernardino Co.....		38,772.4	4,785.4	741.3		690.6	44,988.7
San Diego Co.....	12.3	4,269.9	79.3	527.5			4,888.1
Total tons.....	281.1	125,927.8	10,571.9	2,125.2	4,599.4	11,372.7	154,888.1
Total carloads.....	28.1	12,593.8	1,057.2	212.5	459.9	1,137.3	15,488.8
Car's State.....	9,380.3	13,183.6	8,630.3	3,563.4	654.8	6,377.2	41,772.3
Car's by sea.....	314.1	8.1	79.5	37.5	6.0	1,146.8	1,592.0
Total car's sea & rail.....	9,694.4	13,191.7	8,692.5	3,600.9	660.8	7,524.0	43,364.3

SHIPMENTS OF FRUIT OUT OF THE STATE BY SEA IN 1899.—TONS OF 2000 POUNDS.

	From San Francisco.	Total Carloads.
Green deciduous.....	3,140.5	314.1
Citrus.....	81.0	8.1
Dried.....	798.4	79.5
Raisins.....	374.5	37.5
Nuts.....	60.0	6.0
Canned.....	11,468.3	1,146.8
All kinds.....	15,919.7	1,592.0

TABLE OF GAINS AND LOSSES, 1898 AND 1899, COMPARED—CARLOADS OF TEN TONS EACH.

Articles.	1898.	1899.	Gain.	Loss.
Green deciduous fruits.....	6,973.2	9,604.4	2,721.2	
Citrus fruits.....	18,065.9	13,191.7		4,874.2
Dried fruits.....	7,666.3	8,662.5	1,023.2	
Raisins.....	4,779.6	3,600.9		1,178.7
Nuts.....	551.6	660.8	79.8	
Canned fruits.....	5,322.0	7,524.0	2,202.0	
Vegetables.....	3,847.0	3,404.3		442.7
Wines and brandy.....	9,014.0	8,713.9		300.1
Totals.....	56,149.6	55,482.5	6,129.2	6,795.7
Net loss carloads.....				666.5

SHIPMENTS OF STATE BY RAIL IN 1899 OF VEGETABLES—TONS OF 2000 POUNDS.

PLACE OF SHIPMENT.	Green.	Canned.
<i>Northern California.</i>		
San Francisco.....	3,078.0	364.0
Oakland.....	122.0	1,650.0
San Jose.....	347.0	134.0
Stockton.....	2,423.0	
Sacramento.....	2,236.0	397.0
Marysville.....	92.0	
Total tons.....	8,298.0	2,545.0
Total carloads.....	829.8	254.5
<i>Southern California.</i>		
Los Angeles.....	10,019.2	
Orange County.....	5,163.4	
Riverside County.....	52.2	
San Bernardino County.....	32.4	
San Diego County.....	26.0	
Total tons.....	15,293.2	
Total carloads.....	1,529.3	
Total carloads by rail.....	2,350.1	254.5
Total carloads by sea.....	770.8	19.9
Total carloads from State.....	3,129.9	274.4

SHIPMENTS OUT OF STATE BY SEA IN 1899 OF VEGETABLES—TONS OF 2000 POUNDS.

PLACE OF SHIPMENT.	Green.	Canned.
San Francisco.....	7,708.0	198.5
Total tons.....	7,708.0	198.5
Total carloads, 10 tons each.....	770.0	19.8

the fruit regions of the State. The points of shipment are terminals, to which places cars are credited. It was not possible to get the data, as to all points of shipment, separately stated. But a glance at the map will show the region of country embraced in any given terminal.

Nearly all the oranges and lemons are grown in southern California.

The oranges grown in northern California ripen about a month earlier than in southern California (another illustration of climatic peculiarities), and the home market takes a great many of these, although about 700 carloads went out of the State from the north in 1898.

SHIPMENTS OF OUT THE STATE BY RAIL IN 1899 OF WINE AND BRANDY—TONS OF 2000 POUNDS.

PLACE OF SHIPMENT.	Wine.	Brandy.	Wine and Brandy not Seg'gated.
<i>Northern California.</i>			
San Francisco.....	35,614.0	1,674.0	
Oakland.....	684.0	12.0	
San Jose.....	2,248.0	115.0	
Stockton.....	5,507.0		
Sacramento.....	15,383.0	289.0	
Marysville.....	2,301.0	382.0	
Total tons.....	61,737.0	3,543.0	
Total carloads.....	6,173.7	354.3	
<i>Southern California.</i>			
Los Angeles.....	2,268.0	54.0	1,262.6
Orange Co.....	8.0	2.0	31.5
Riverside Co.....	129.0		
San Bernardino Co.....	378.0		128.8
San Diego Co.....			53.6
Total tons.....	2,783.0	56.0	1,476.5
Total carloads.....	278.3	5.6	147.6
Total carloads by rail.....	6,452.0	399.9	147.6
Total carloads by sea.....	1,679.8	34.6	
Total carloads from State.....	8,131.8	434.5	147.6

SHIPMENTS OF WINE AND BRANDY OUT OF STATE BY SEA—TONS OF 2000 POUNDS.

Place of shipment.	Wine.	Brandy.
San Francisco.....	16,797.7	345.5

Practically all the fresh deciduous fruit is shipped from the north.

The raisin center is in the region of Fresno county, and of the 4779 carloads exported in 1898 but 323 carloads went from southern California, while over 4000 carloads went from Fresno county.

The prune center is in Santa Clara county and vicinity, and in that region probably 70% of our prunes are grown.

Of the dried fruit over 85% goes from the north, and an equally large per cent of the canned fruit.

The walnuts are principally grown in the south, while the almonds are mostly from the north.

The fresh peaches, pears, cherries, plums, apricots, etc., nearly all go from the north. Over 1800 tons of fruit of various kinds were shipped in 1899 from the port of San Francisco by sea.

Some remarks are called for from an inspection of the tables printed below. There was a slight gain in the fruit shipments of 1899, compared with 1898, of seventy-six carloads; but there was a marked decline in citrus fruits and raisins. It will be borne in mind that my reports are for the calendar year, while the orange season begins in November and laps into the next year. The growth of that industry is shown approximately by a series of years thus reported, although the report is misleading at times as to a particular season. For the calendar year 1899, compared with 1898, citrus fruits fell off 4874 carloads and raisins 1178 carloads; but green deciduous fruits gained 2721 carloads; dried fruits, 1026; nuts, 79, and canned fruits 2302 carloads.

Vegetables made a gain of 442 carloads, and wine and brandy 300 carloads. Notwithstanding the drought which prevailed to some extent throughout the State for these years and the presence of unusually late frosts, there has been no great falling off in the output. The lack of rainfall was supplied by irrigation, and the frosts hurt only in localities and not to destroy the entire crop in any of the fruit-growing regions. In southern California, where lack of rain was most pronounced, the season was on the whole very prosperous. This was brought about chiefly by developing new and cheap sources of water supply for irrigation.

Vegetable growing for the markets of the world is an assured occupation in this State. California canned asparagus may be bought to-day in all the first-class groceries of the chief cities of the globe. Nothing finer can be produced than we are now sending abroad. Equally fine are the peas and other vegetables that can be preserved for use at all seasons, in glass and tin. All varieties of edible vegetables are grown here to perfection. Large fields are devoted to celery, asparagus, cabbage peas, beans, potatoes. In one year we have shipped out of the State by rail and by sea 7000 carloads of ten tons each of fresh vegetables. Our truck gardeners are planting and harvesting every month in the year—one crop after another. In recent years the business of canning has assumed large proportions.

For the past five years the average annual shipment of beans out of the State amounted to 60,000,000 pounds. About three-quarters of this quantity are sent to foreign countries.

Agricultural Review.

BUTTE.

NEW HEMP MILL.—Gridley Herald, April 7: H. A. Cook, superintendent of the Rau hemp ranch, tells us that a mill to replace the one that was burned last week will be built as soon as arrangements can be completed for getting new machinery.

TO FIX WAGES.—Biggs Argus: Farmers propose to form an organization for the purpose of fixing the price of wages to be paid to farm help. They expect to fix the price per day's labor at a fair rate, and obligate themselves to pay that rate under a penalty. They claim that by organizing, the men who are in the habit of working a day or two and then quitting, with the excuse that they can get better wages of another farmer, will be compelled to take the fixed wages or go without employment, and that better satisfaction will result all around.

MANY TWIN PEACHES.—Gridley Herald: Those who have inspected the young peaches which are just coming out of the "jacket," or calyx, say that 99 out of every 100 are either twins or triplets. Ordinarily the twins and triplets are pulled off the trees when the fruit is thinned, but in some orchards this year to do that would nearly clean the trees of their crop. The variety said to be most afflicted by this tendency is the Muir peach. In one orchard near Chico the Muir trees have practically nothing else, and the owner expects to get nothing but drying fruit from them.

DISTRICT RACES.—Marysville Democrat, April 3: Yesterday the directors of the Chico district fixed the schedule of races and amount of purses for the fair and race meeting, August 13th to 18th, as follows: No. 1, 2:40 class, trotting, \$1000; No. 2, 2:25 class, trotting, \$1000; No. 3, 2:30 class, pacing, \$1000; No. 4, 2:20 class, pacing, \$1000; No. 5, 2:27 class, trotting, \$500; No. 6, 2:13 class, trotting, \$500; No. 7, three-year-old, open, trotting, \$300; No. 8, 2:14 class, pacing, \$500; No. 9, 2:11 class, pacing, \$500; No. 10, three-year-old, open, pacing, \$300. The first four are nomination stakes and the entries close May 1—\$20 to be paid May 1, \$10 additional if not declared out on or before June 1; \$10 additional if not declared out on or before July 1, when horses must be named and eligible, and \$10 to start, to be paid the day before the race.

FRESNO.

NEW WINERY.—Selma Enterprise, April 5: C. K. Kirby, the well known vineyardist, is soon to commence building a large winery and distillery in Selma. The main building will be 60x260 feet. Work on the brick foundation will be in progress within a few days.

RAISIN PACKERS INCORPORATED.—Sacramento Bee, April 6: Articles of incorporation have been filed with the Secretary of State of the California Raisin & Fruit Packing Company, with a capital stock of \$1,000,000. Of the capital stock, \$200,000 is available for the construction of packing houses and purchase of seeding plants, the cash to be had on a deposit of growers' slips, authorizing a deduction of 1 cent per pound on the crop of 1900 for the Association. The directors are also the directors of the Raisin Growers' Combine.

GLENN RANCH TO BE SUBDIVIDED.—Willows, April 3: The executors of the Glenn estate announce that the property will be put on sale in subdivisions during this summer and fall. The Glenn ranch embraces 42,500 acres. The property was originally a Spanish grant, the Jacinto rancho, and came into the possession of Hugh J. Glenn many years ago, when it was an immense stock range. Glenn knew the worth of the land and commenced plowing up large portions of the property and planting grain. The property is now mortgaged for \$600,000, and it is to remove this indebtedness that the land is to be sold. The horses, mules, cattle, sheep, implements and other such

property owned by the estate will be sold at auction.

HUMBOLDT.

NEW SKIMMING PLANT.—Arcata Union, March 30: Isaac Minor has finished his second skimming station, which is situated in West End, across from Blue Lake. The other skimming station is located at the Glendale mill. A new separator of the latest pattern was put in and the power will be furnished by a donkey engine. The cream will be separated at these stations and hauled to Dow's Prairie, where it will be converted into butter.

PRODUCE SHIPMENTS.—Eureka Standard, April 4: Compared with the previous month, March shows a considerable increase in the shipments of butter, condensed milk and cream. In the first named item the March exports exceeded those of February by 59,540 pounds, while the exports of milk and cream were 537 cases in excess of those of February. March records shipments of 138,130 pounds of butter and 1160 cases of condensed milk and cream.

KINGS.

IRRIGATION COMPANY INCORPORATED.—Hanford Journal, April 6: Articles of incorporation of the Kings Canal & Irrigation Company have been filed. The principal place of business is Lemoore, and the capital stock is \$5000, divided into 1000 shares of the par value of \$5 each. The directors are S. W. Barbour and Henry Cousins of Hanford, and Stiles McLaughlin, H. Clawson, Mack Lovelace, Frank Blakeley and E. F. Ogle of Lemoore.

RIVERSIDE.

ANOTHER SPLENDID WELL.—Riverside Bee, April 7: At a depth of 540 feet the Riverside Water Company struck a well which flows 182 inches of water 14 inches over the top of the casing. This well was started on March 1, but active work of drilling was only twelve days. When the strike was made it was apparent that one of the finest streams of water over struck in San Bernardino county had been tapped. It is an interesting fact that the new well cost less than \$800.

SAN BERNARDINO.

WATER COMPANY FORMED.—San Bernardino Sun, March 31: Articles of incorporation of the Riverside Water Company have been filed. The capital stock is \$30,000. The directors are John Anderson, John Broadfield, Calvin Patton, Parley King and W. J. Curtis.

SANTA CLARA.

FARMERS' INSTITUTE.—San Jose Mercury, April 6: A Farmers' Institute, under the superintendency of the Agricultural Department of the State University at Berkeley, will be held at Los Gatos on May 4th and 5th next. Interesting lectures and practical talks will be on the programme. The Los Gatos Grange will entertain those who have it in charge.

SACRAMENTO.

SHIPPING ASPARAGUS.—Sacramento Bee, April 4: Sacramento asparagus beds are now, and have been for some time past, supplying the tables of Boston, New York and other large cities of the East and West, and the orders for the product have been coming in at a most surprisingly rapid rate. It has been thought that asparagus would not carry far, and when some was landed in Salt Lake in good condition it was thought that wonders had been accomplished. The credit of placing asparagus in the big cities of the East belongs to James Tucker, route agent of Wells-Fargo Express Company. He commenced the shipment of asparagus by express in small crates and orders for more came, and now Sacramento asparagus is going to the following States and Territories: Utah, Nevada, Kansas, Colorado, Oklahoma, Minnesota, New Mexico, Oregon, Ohio, Iowa, Wisconsin, Wyoming, Nebraska, New York, Pennsylvania, Massachusetts, Illinois, Missouri, Louisiana, Arizona, Arkansas, Montana, New Jersey and Washington, D. C. From March 6th to the 30th, 12,200 pounds were shipped to the points designated above. Large lots of canned asparagus are annually shipped from here.

SHASTA.

ORCHARDISTS SUE SMELTERS.—Redding Free Press: Peter Stolberg and Frederick Maurer, fruit growers doing business as the firm of Stolberg & Maurer, and Peter Stolberg and Leoboldine Maurer have brought suit against the Mountain Company for \$15,000 damages, resulting from the effect of the smelter smoke upon the plaintiffs' almond and fruit orchard, located near Shasta and within three miles of the smelter. The plaintiffs further ask the court to adjudge the smelters and roasters a nuisance and a decree for their abatement.

LARGE OLIVE ORCHARD.—Redding

Democrat: In Happy Valley, ten miles south of Redding and about two miles from Orinda postoffice, is situated one of the largest productive olive orchards in the State and the largest in northern California. It is known as the S. T. Alexander farm; 112 acres are planted to olive trees, and this year 11,200 trees were in bearing. The oldest trees have been planted about six years, and from these the product this year is something over 2000 gallons of olives.

SONOMA.

SOUR SAP.—Santa Rosa Republican, April 2: Fred L. Wright returned from a visit to his father's ranch near Windsor and reports that the damage to prune trees by "sour sap" in that vicinity is more extensive than was at first reported. Large numbers of trees are dying. The orchards affected, however, are on lands where there is an excess of moisture and where the soil is heavy. Mr. Wright thinks that in some of the orchards about one-fourth of the trees will be destroyed.

APPLES IN COLD STORAGE.—Petaluma Courier: L. E. Thompson is packing 500 boxes of apples for the San Francisco market that are equal to the finest fruit of November. They were kept in cold storage at the Western Refrigerating Company's plant, and have come through to March with a loss of only 3%, except in one instance, where the temperature was allowed to run down a little too low. The Bellflower lost a little greater percentage. The Red-cheeked Pippin, Newtown Pippin and Sonoma Seedling are the principal varieties. This fruit is bringing in San Francisco \$2.25 and \$2.50 per box, forty or fifty boxes being shipped daily, for which a ready market is found.

A CURIOSITY.—Windsor Herald: James Shane brought to this office last Sunday a curiosity in the way of a solid piece of redwood rail with an acorn imbedded therein. Mr. Shane and Thomas Brown were converting an old rail fence into pickets, and while they were splitting the rails they found embedded in the center of one an acorn in a perfect state of preservation. The acorn was covered with fully 2 inches of solid wood on every side, there being no sign on the outside of the rail that the wood had ever been disturbed in any manner. The fence has stood there over thirty years, and there is no telling how long the acorn had been in the tree before the same was worked up into rails. It is probable that it has been buried there for over 100 years.

SUTTER.

DOUBLE PEACHES.—Yuba City Farmer, April 6: From present observations in the peach orchards there appears to be a large amount of the young fruit forming in doubles and often three in a bunch. This will necessitate thinning these twins and triplets, as the fruit when divided is generally deformed, and the rule is to take both or all these peaches off when stuck together. The proportion of these is large this season in some varieties.

TEHAMA.

SHEEP SALE.—Red Bluff News, April 8: B. A. Bell sold 1500 yearling wethers, sheared, to Cone & Ward for \$2.75 per head. We believe this is the top price, considering the age of the sheep, of the season.

BALLING ORANGE TREES.—Corning New Era: Herbert Samson has received a carload of fine orange trees, which were grown for him by contract by the Oroville Citrus Association at Oroville. The trees were taken up with a form made for the purpose, so that a large ball of dirt, that the trees grew in, is on the roots of every tree. These trees, by careful handling, can be planted out in orchard lots without checking the growth a particle. The extra cost of balling does not amount to over 10 or 15 cents per tree, and Mr. Samson says that he has come to the conclusion that it pays to have them balled, as it is impossible to keep the naked roots of the tree from being exposed to the air, and this is sure to check the growth of the trees, and in a great many instances the trees will die from the effect.

TULARE.

BEE KEEPERS MEET.—Visalia, April 4: The Tulare County Bee Keepers' Association met to-day. R. Hyde was unanimously elected to handle the entire honey crop of the county this year. Estimated honey yield is seventy-five tons.

PEACH AND PRUNE CROPS.—Visalia Delta, April 5: Growers say the prune crop in this section will not be light by any means, although it is admitted that the yield will not be heavy. In portions of the large orchards it is said that prunes did not set well and will be light, while in other portions fruit is found in great quantities and in a flourishing condition. It is the universal opinion that the peach crop this season will be very heavy. The young fruit in all localities set well and is now looking well.

YOLO.

CROP PROSPECTS.—Winters Express, April 6: There are many fields of barley between Winters and Woodland well headed out and the stalks of grain standing almost as high as a man's head. This is uncommonly early. Wheat is also very forward and the late sown is coming on finely. Driving across the country we saw three fields of hay in the swath. There is more that might be cut. The volunteer and natural growth is something phenomenal. As for fruit, the situation is unchanged and the prospects all that could be desired. Apricots are very large and thick and orchardists are industriously thinning—in fact, there will be mere 'cots on the ground than on the trees. A few apricot orchards are said to be a little shy, but the probabilities are that even in them thinning will be necessary. Both peaches and pears are in good bearing and the trees in Al condition. The help problem is worrying fruit growers and farmers and unless people come here for work it will be a serious matter. Even now there is constant inquiry for help, with few responses. Winters could absorb half a hundred families in a month and not a soul of them be idle a day.

ARIZONA.

DROUGHT BROKEN.—Phoenix, April 5: The protracted drought, which threatened disaster to stock and other industries, has been broken. All southern Arizona has been covered by rain falling spasmodically since Tuesday, and about 0.78 of an inch has slowly fallen in the central portion of the State, the ground receiving the entire benefit.

OREGON.

HOP CROP.—Seattle Post-Intelligencer, April 5: According to the observations of James O. Gamble, a large hop dealer and grower of Astoria, who is new in the city, Oregon will produce one-third more hops this year than last. "Last year our hops were of a very excellent quality, and while the price was low, the crop was heavy and growers did not lose any money," he said. "The acreage this year has been increased throughout the State fully one-third, and so I say our product will be greater than that amount. Within the past five years the quality of our hops has been improved, and many of the breweries that formerly imported much of their stock are now using our article instead. The indications are that this year prices will be better. The trade of the Philippines and the far East is calling for a large amount of beer. This increases the demand, and when last year's shortage is considered the outlook for both Washington and Oregon growers is certainly brighter."

WASHINGTON.

HIGH PRICES FOR WOOL.—Seattle Post-Intelligencer, April 5: Sheepmen are jubilant over the prospect of big prices for their spring clip, which they believe will be larger than for several years. Twenty cents is the price talked of for first-class fibers.

FRUIT CROP PROSPECTS.—Never before have the prospects been better for the fruit crop than at this time in the Wenatchee valley. The winter has been mild in extreme and even the tenderest bud has survived and burst into bloom. That there will be the largest crop of plums, apricots and peaches ever raised in this section there is no doubt, unless we should yet have a freeze. The weather has turned off warm and the apricot and plum trees are in full bloom, and the peach trees are just ready to burst into blossom. Never before has there been such thorough spraying done, which we attribute to the horticulturist institutes. S. W. Philipps, the fruit inspector of Chelan county, will visit every orchard in the valley early and see that no infected trees are allowed to remain in that condition. Early garden truck is up and gardeners predict a prosperous season also. Many acres of tomatoes and melons will be planted in the valley this year.

Horse Owners! Use

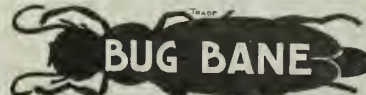
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A Safe Speedy and Positive Cure



The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.



TREE WASH!

STEAD'S "BUG BANE" is the best and cheapest wash known for either citrus or deciduous trees. Contains no poisonous chemicals. Is a fertilizer and tree tonic combined. Never clogs your pump or clogs up the pores of a tree. EASY TO HANDLE. Always effective. In use for more than ten years by leading fruit men, some of whom use upwards of 20 tons per year. Their testimonials together with prices and full directions up on application.

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THE HOME CIRCLE.

California's Climate.

In California may be found
The best in all creation 'round,—
Fruit, flowers and sunshine, earth and sky,
All creatures that walk, swim, or fly:
The finest game for rod and gun,
The largest trees beneath the sun,
And land-locked harbors, deep and wide,
In which the fleets of earth may ride;
But of all things o'er which we boast,
That which is praised—and blamed—the
most,
As source next to Almighty will,
Of what betides us, good or ill—
Is California's climate.

Let times be good, or cause distress,
Crops prove a failure, or success,—
If from divine or human laws,
It matters little whence the cause:
For if we seek to find the spring
Of happiness or suffering,—
Caprice of fortune, love, or power,
Which evils bring, or blessings shower;
Instinctively the mind will turn,
And every other reason spurn,
To that great fructifying force—
That general and productive source,
Our California climate.

Our great and numerous public men
Who wag the tongue, or wield the pen,
And by their genius save our land
From dire Destruction's ruthless hand;
Our long-haired poets, artists, cranks,
And devotees in Music's ranks:
And to this list must we annex
The beauty of the gentler sex,
Which is our fairest pride and boast
From mountain top to ocean coast;
These wondrous gifts of priceless worth,
Are bred from our prolific earth
By California's climate.

Elmhurst. —J. R. Ruckstell.

A Sacrifice to Bhowani.

Sitaram Dhas left his hut at earliest dawn. He carried on his shoulder his rude plow, consisting of two strong poles, the one forming the beam and the other, shod with iron at one end, serving at once as the share and the single handle. He drove his two little bullocks, already yoked, before him. His wife, Mana, and his sister Rebi shrilly wished him luck in his day's plowing, and Ramchand, his little nine-year-old boy, proudly bore Sitaram's great bamboo bow and quiver of arrows, for who could tell what evil beast father might find in the clearing which he had made in the forest? not to speak of the chance of a fine fat buck coming his way to provide them with a feast.

Arrived at the clearing, Sitaram firmly lashed the beam of the plow to the yoke, slung the bow and quiver at his back, and stuck the handle of his little Santhal axe in his girdle. Then, driving the iron shod point of the plowshare into the ground and cheering on the little bullocks with an inspiring cry, the plowman began his work. Back and forward the little bullocks plodded all the long morning. The sun rose high in heaven, and poured down its rays pitilessly on the little clearing of four or five acres. Sitaram was himself ready for the midday rest when little Ramchand appeared with a great armful of coarse grass which he had cut. The plow was stopped in the furrow, the grass thrown down before the hungry bullocks, Sitaram lay in a shady spot to sleep through the heat of the day, and the boy started off to gather sticks for the fire at home.

When the sun began to sink toward the west Sitaram awoke. He had had a dream which disturbed his mind. He thought he saw the great black image of the goddess Bhowani, with her necklace of grinning white human skulls, standing before him as he had seen it in the old temple that stood, feared and revered by all his tribe, far in the recesses of the hills. The goddess said not a word, but she looked at him with a frowning and terrible countenance and brandished before his eyes the great sacrificial knife she held in one of her hands.

Sitaram trembled in every limb. He dared not try to guess what that awful apparition might portend. The goddess loved human sacrifices, and though the Sahib Log, who were lords of the land,

did their best to prevent them, he knew that children were sometimes offered. But the plowing must be finished. Tomorrow he would have to begin sowing. In the meantime he would try to forget his dream. Again, with voice and goad, he urged the bullocks to their work. The last furrow would soon be turned. It was nearly dark when the bullocks got to the end of that last furrow, and Sitaram stopped them. He had scarcely let go the handle of the plow when something that in the uncertain light looked like a grayish puff of smoke flew out of the darkness of the forest and alighted with a crash on one of the bullocks.

Sitaram snatched at the strong bamboo bow and fitted an arrow on the string, for he well knew that it was one of the pair of tigers that the shikaris of all the country round had been tracking for weeks past. The beast had killed the strong young bullock that Mana's father had given to her husband. Sitaram drew the bow with all his force, holding in his hand a second arrow in case the first should miss its mark. The tiger lay on the body of the prostrate bullock, greedily drinking the blood which flowed from a wound in the animal's throat. The arrow flew true to its aim, and buried half its length in the great cat's shoulder. But it had been shot from behind, and Sitaram knew he had given neither a mortal nor a disabling wound. The tiger snarled savagely, and bounded into the darkness, followed by the second arrow.

Sitaram sorrowfully released the surviving bullock from the yoke, and drove the trembling animal home, leaving the plow and tackle behind. The night closed in, and should the tiger return to feed on the carcass of the dead bullock there would be no chance of another shot. So a family council was held in the little hut, Mana and Rebi, after the fashion of the Santhal women, freely giving their opinions. It was decided that in the morning Sitaram should go and seek counsel of the old Rajandra Lal Bhai, the tribal priest who served the temple of the great goddess Bhowani.

The wisdom and sanctity of Rajandra Lal were renowned throughout the country, even to the Sahibs at Birbhum. They indeed, vehemently suspected him of keeping up the old Santhal custom of human sacrifice, and made many inquiries about the matter; but nothing could be learned from the tribesmen beyond hints darkly dropped at the market by Santhals whose tongues had been loosened by excessive drinking of toddy or rise whiskey, but the sight of a white face or a police uniform was enough to reduce them to silence and that pretence of stupidity in which, when he chooses to assume it, the native of India, whatever may be his tribe or caste, has no equal.

The holy man, sitting on his heels on a tiger skin spread in the porch of the temple, listened to the story of the dream, the loss of the bullock and the wounding of the tiger.

"I will ask the Devi," said the priest, when he had heard all. "But what hast thou, Santhal, to give her for thy life?"

"What I have, Babu, is naught," said the poor wretch, trembling. "I am but a poor jangliwala, and I have lost my best bullock. What can I do with one? Is it not better the tiger should eat my wife and child and me than that we perish of hunger?"

"Thou hast a wife and child, Santhal," said the priest, "and thou hast a good bow." Then Rajandra Lal fixed his eyes on a hideous little black image over the door of the temple. He swayed backward and forward, and his eyes began to roll. Then he spoke:

"Son of the Santhal, hear the Devi: 'The Santhal have forsaken my temple, and withheld the sacrifice of blood which I love. Return, Santhal. Bring thy child to the place of sacrifice. Offer him on the sacred stone, and anoint thy arrows with blood. With those arrows shalt thou kill the tiger, and for the beast lost thou shalt have a better one. Fail in this and the tiger shall defile thy dwelling and sweep thee and thine from the face of the land.'"

Sitaram trembled at the command of the goddess. He laid two or three

pieces—all the money he had in the world—on the old priest's tiger skin, and sorrowfully made his way home. He told Mana and Rebi the command of the goddess, and they too were sorrowful, for little Ramchand was the light of their eyes and the joy of their hearts. But where was Ramchand? He had not been seen either by his mother or his aunt, and they were in great fear lest some evil should have befallen him. Suddenly the child, in the midst of the anxious consultation, burst into the hut.

He had a tale to tell. Oh, he was quite safe; no evil had happened to him. What, indeed, could happen? He had the bow, nearly a cubit longer than he was high, that his father had shaped for him. Then the little fellow drew himself up to his full height. He could shoot and hit a mark almost as well as his father, though his arrow would not go so far or penetrate so deeply. But then he had his axe, and the katas, or knife, Sitaram had bought for him in Birbhum. He could defend himself even against the fierce Chita. He had been to the field where lay the dead bullock, and the tiger had not returned to its prey. He had tracked the tiger through the jungle, but had come home to report what he had seen.

Sitaram and Mana exchanged looks, and each mentally vowed that little Ramchand should never, whatever might happen, fall under the sacrificial knife. The boy was a true Santhal, learned in jungle craft beyond his years, and destined in time to become a comfort and support to his parents. Then they began to consult. There could be no doubt that, since the tiger had not returned during the night or the early morning, he or his mate, or both, would come that very night. Sitaram went out to see the state of affairs for himself. He found that his boy had reported correctly. His enemy might be expected that very evening. A low, hanging limb of a great tree, one of the outlying sentries of the jungle, almost impended over the spot where the carcass of the bullock lay. On it Sitaram made a sort of perch, a small platform from which to shoot his enemy. His wife and his sister, with little Ramchand, had their parts in the drama that was to be enacted. Armed with sharp little Santhali axes and rude spears for their defence, they were to lie hidden in an adjacent thicket, ready to help at the proper time. They carried brass dishes, too, by the beating of which and their shrill cries the tigers, if there should more than one, would be confused and frightened.

The sun had hardly set when Sitaram took possession of his perch. He squatted there patiently, wrapped in a coarse, brown native blanket. After all, according to our European notions, this man seems a poor creature thus to perch himself on high out of danger, while the women and the child remained below without adequate defence. But it must be remembered that everything depended on his strength of arm, and his eye must command the whole scene of action. The tiger might or might not spring on one of the women or the child, but they knew the risk as well as the man did, and they took it.

The night was clear and bright, and Sitaram watched intently. The suspense was almost painful. At length there appeared a long ghost-like form, stealing from the shelter of the trees across the open country toward the carcass of the dead bullock. Almost immediately after came another similar but slightly larger form, dragging itself along, limping, and with difficulty. Any one who has watched the motions of a pair of cats on a nocturnal thieving expedition will have a lively idea in miniature of the appearance the procession presented.

Sitaram took his bow and two arrows in his left hand; with his right he fixed the notch of a third arrow on the string. Then he took a steady and careful aim at the neck of the leading tiger, just behind the head. The bowstring twanged sharply. The animal was almost directly under him at the moment. The arrow had pierced the spinal cord. The second tiger stood still for a moment, sniffing the air. Then he uttered an appalling succession of sort, sharp yells, tearing up the ground with his

claws. Suddenly the air was filled with a mighty clatter of brass dishes, and vigorously beaten, mingled with shrill screechings from the two women and Ramchand. This confused the tiger, and he half turned, presenting his side to the hidden enemy in the tree. He offered a fair mark to the skilful archer,

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who drew his bow with all his strength. Again the string twanged, and the arrow pierced the tiger's side just behind the shoulder blade.

The animal turned and in his dying agony—for, as it turned out, his wound was mortal—he bounded toward the only enemies he could see, the two women and the boy. He was received on the point of Rebi's spear. The heroic woman had planted the butt of her weapon on the ground and firmly grasped the shaft with both hands; and she continued to hold it with undaunted resolution, though the tiger in his death struggle almost tore her to pieces with his claws.

Sitaram, axe in hand, when he saw the tiger charge dropped from his perch. But he was too late. His enemy stretched out his great limbs, and as Rebi, falling fainting with loss of blood, let go the shaft of her spear and sank on the ground, the tiger's great body lay stretched beside her.

"This, then," said Sitaram, as he and Mana, after doing all they could to stop the flow of blood from poor Rebi's wounds, were carrying her tenderly to the hut, "is the sacrifice the Devi wanted—a more worthy sacrifice than the life of a child. Rajandra Lal shall have no more of my money or goods."

"Rajanda Lal is a liar and a cheat," sobbed Mana. "If Devi Bhowani is indeed powerful, she can take her own for herself."

They made the injured woman as comfortable as they could. There was no means of getting proper care and attendance for her, and probably no skill could have saved her. But she was happy, for she thought she had given her life for her sister and her sister's child, and she died rejoicing in the thought.

Sitaram had no time to indulge in sorrow. The two tigers must be skinned and their heads cut off. They were young animals, and the skins were very fine. Then at earliest dawn he had to pack his spoils on his remaining bullock and start for Birbhum.

When he got there it was no easy matter, between the Treasury poens and the Tahsildar, to get admission to the Collector Sahib. At last he was introduced, bullock and all, to a gentleman who was just on the point of mounting his horse. To him Sitaram told his story.

"You killed two tigers last night, did you?" cried the Collector. "Then you're a lucky fellow to be alive to tell it. But tell me the whole story," and he sat down on a chair in the veranda to listen.

"Your Honor's slave shot them with arrows, for one of them had killed your slave's best bullock the night before," answered Sitaram, with many salaams. "Here are the heads and skins." Then he unrolled the two bundles and spread the skins in the veranda.

Then the Collector called Karim Ali, the Tahsildar, and directed him to pay Sitaram ten rupees for each head, and when the poor jangliwala saw the twenty bright silver pieces counted into his hand he actually trembled. He had never seen so much money in his life. But that was not all, for the Sahib had been examining the skins, and he asked what Sitaram intended doing with them; and when he heard that they were to be offered to some of the Chunar, who would probably buy them for a few rupees, he himself at once offered to give twenty rupees for them, and as Sitaram could not go home that night, for the sun was already low, he was told to come to the Treasury early in the morning for his money. He did so, and was paid.

Sitaram became a prosperous man after that. He was rich, and Rajandra Lal's prophecy was so far verified that he soon became the proud possessor of the best pair of plow bullocks in the district. Mana and Ramchand were loaded with silver bangles and anklets, and the little hut in the jungle was soon resplendent with a glittering array of the brazen lotas and dishes with which the prosperous Indian raiat, when he can afford it, loves to adorn his home.

But the temple of Bhowani gained nothing, though her priest did not fail to remind Sitaram of all he owed to the Devi. The truth is that the Indian

aboriginal had had his faith in and fear of the malign deities whom his people have added to the Indian Pantheon weakened till it had almost ceased to exist. Besides that, in Birbhum he had listened to the preaching of a Mussulman, who said that the Brahmins were naught, and the gods were less, but there was one great God, who had sent his messenger, one Mahomet, to declare that before Him all men, from the highest Brahman to the lowest outcast, were alike. It was a strange doctrine, and Sitaram half believed it. At any rate it was a comfortable doctrine. In spite of his skepticism he prospered exceedingly, and in that he was helped not a little by the favor of his friend, the Collector.—Cornhill Magazine.

How to Brew Tea.

The assertion made by Wu Ting Fang, Chinese minister to the United States, at the recent tea importers' dinner, that Americans did not know how to brew tea, attracted so much attention that he was asked by a morning paper to give to the public the proper receipt. Mr. Wu says:

"The teapot, in China, is invariably of porcelain, and varies in style, cost, and dimensions in accordance with the taste, wealth and size of the family possessing it. In the morning a sufficient quantity of dry leaves is placed in it, and on this is poured hot water. Let this infusion stand for a few minutes—say four or five—and you have what we, I think rightly, regard as a drink fit for the gods.

"It is always ready. Whenever the pot needs replenishing all we have to do is to add a little more tea and a little more water. There is no hard and fast rule as to the proportions of tea and water or as to the character of the tea itself. It is all a matter of individual taste. We use black and green tea, and have it either weak or strong, just as our tastes direct.

"We never drink it boiling hot, as is done in America and England, but at a moderate degree of warmth. To maintain this desirable temperature it is customary to cover the teapot with a sort of a bag padded with cotton and lined with silk.

"The family teapot is simply emptied and replenished every morning and not scoured inside, as that would rob the vessel of its delicate aroma. In this way an old teapot acquires a degree of fragrance that is analogous to the seasoning of a pipe that has been long in use." The addition of milk, sugar or any other ingredient is severely condemned by the minister.

One Way of Economizing Fuel.

It is a well-known fact that, of the heat given off from the fuel in our cooking stoves, only a small proportion is actually used in cooking our food, the rest escaping up the chimney or into the room. Economy as well as comfort demand that such waste be as small as possible. A simple and inexpensive device will largely prevent the radiations of heat when it is not needed for warming the kitchen. This is a stove cover of asbestos, which is a non-conductor of heat. It is not a heavy material and retails at the stove stores and plumbers' for about ten cents a pound. A rather thick sheet or board is preferable to the asbestos paper. A single piece should be cut of the size of the top, then laying it on the stove, with the covers removed, openings can be cut the exact size of the holes with a sharp knife. A loop of wire inserted in these makes an easily removable cover. For the sides the board can be bent downward, fastening it at the corners by pieces of wire. In order to open the doors it is best to attach a separate side piece somewhat loosely to the top, so that it can be raised on a hinge. The sides do not need to fit the stove closely, as the air does not conduct heat well if it is kept from moving. Gas or gasoline ovens, as well as common stoves, can be protected in the same manner. I have my own gasoline oven covered in this way and find that its efficiency is doubled.—Mrs. Rockwood.

DOMESTIC ECONOMY.

Hints to Housekeepers.

Narrow strips of ticking tied to a piece of broom handle is the best whip to beat upholstered furniture.

In bridal veils two plaited fans of tulle are now used instead of the coronet arrangement. They stand upright upon the head as would an aigrette, and are placed one on either side of a tiny spray of orange blossoms. The fans must not be too tall or stiff.

A correspondent sends a receipt for an orange marmalade very easily made. Four oranges and three lemons are sliced very thin and all seeds removed. Cover them with two quarts of water and let stand over night. Cook till very tender, then add two quarts of sugar and one pint of water, and cook until syrupy, when the marmalade is ready to be transferred to the glasses.

To wash white veils take a lined saucepan, and in it make a strong solution of soap and water, put the veil into it and place over the fire to simmer for about twenty minutes; then squeeze the veil in warm soap and water till it is quite clean; rinse in cold water, then again in a little cold water to which has been added a few drops of blue and one lump of sugar. Shake the veil gently and pin it on a clean towel to dry.

Peanut butter is the latest of the many uses to which the little nut is put, and is becoming an important commercial product. Peanut butter is made by grinding the nuts very fine and reducing the mass to a pasty substance, a portion at least of the large amount of oil contained being removed. Some salt is added for flavoring and the result is a cheap and nourishing spread.

To curl ostrich tips or feathers shake the dust off thoroughly. Have a large kettle of water boiling rapidly and hold the feathers in the steam until they are heated through, then shake them out in dry heat. Take a piece of real whalebone perfectly smooth, a silver or celluloid letter opener with a dull edge, and curl the feathers with it by drawing the barbles over the edge, beginning at the quill and taking only two or three barbles at a time. Be careful not to break the feathers while curling them. The process is tedious, but the results will repay careful manipulation.

Domestic Hints.

SCALLOPED OYSTERS.—Clean one pint oysters, moisten one cup cracker crumbs in one-third cup melted butter. Put one-fourth of crumbs into baking dish, then one-half of oysters, season with salt, pepper and lemon juice, then another fourth of the crumbs and remaining oysters. Season, and cover with remaining half of crumbs. Bake in quick oven until liquor bubbles and crumbs brown.

CHEESE MUFFINS.—These are nice in cold weather for lunch or supper. Make a raised muffin batter and when filling the tins scatter on finely cut cheese. Some prefer to insert one wedge-shaped piece in each. With good coffee they constitute a satisfying beginning for those blessed with good appetites, and the pleasant odor stimulates those who must be tempted and attracted by novelties.

CHOCOLATE BREAD PUDDING.—One cup stale bread crumbs, two cups scalded milk, one ounce chocolate, one egg, three-quarters of a cup sugar, piece of soda size of a small pea, vanilla to flavor. Soak the crumbs in the milk and add the soda. Melt the chocolate by standing over hot water, add a half cup of the sugar and a half cup of milk drained from the bread. Beat the egg and remaining quarter cup of sugar, add chocolate mixture and soaked bread and mix thoroughly. Flavor with vanilla and bake an hour in a well-buttered pudding dish.

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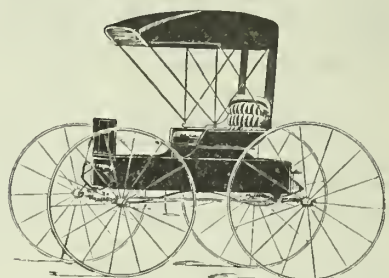
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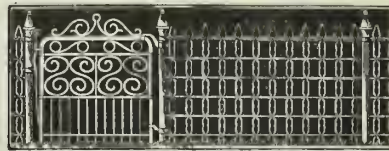
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, April 11, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	67½@68¼	—@—
Thursday.....	68 @67	—@—
Friday.....	67½@68½	—@—
Saturday.....	66½@68¼	—@—
Monday.....	67½@68½	—@—
Tuesday.....	66½@67½	68 @68½

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday.....	5s 10¼d	5s 9¼d
Thursday.....	5s 10¼d	5s 9¼d
Friday.....	5s 10¼d	5s 9¼d
Saturday.....	5s 10¼d	5s 9¼d
Monday.....	5s 10¼d	5s 9¼d
Tuesday.....	5s 10¼d	5s 10¼d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	97½@ 96½	1 05¼@1 03¾
Friday.....	96½@ 95½	1 03¾@1 03¾
Saturday.....	96½@ 96½	1 04¼@1 04
Monday.....	96½@ 97	1 04¼@1 05
Tuesday.....	96½@ 97½	1 04¼@1 05
Wednesday.....	96½@ 97½	1 04¼@1 05¼

WHEAT.

There has been little new or startling in the wheat market since last review, either here or abroad. The local market has been especially quiet, so far as spot trading was concerned, without any appreciable fluctuation in quotable values. Ships continue in light supply and ocean freight rates high, although the situation in this regard promises to be a little easier, or slightly more favorable to wheat in the near future, than it has been for months past. No great relief need be expected, however, in the matter of ships or freights during the balance of the current season. Wheat ships are not now quotable over £2, or \$9.60, per long ton, which is 1s 3d, or 30c, per ton under the extreme figure of the season. There is now only one disengaged ship in port and thirteen under charter for wheat. The world's visible supply shows a decrease this week of only 477,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 96½@97½c.
December, 1900, delivery, \$1.03½@1.05¼.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at 96½@97½c; December, 1900, \$1.04¼@1.05¼.

California Milling..... 97½@1 03¾
Cal. No. 1 shipping, alongside..... 96¼@ 98½
Oregon Valley..... 95 @1 00
Walla Walla Blue Stem..... 95 @1 02¼
Walla Walla Club..... 85 @1 00
Of qualities wheat..... 82¼@ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	6s4d@6s5d	6s5d@6s6d
Freight rates.....	22¼@—s	40@—s
Local market.....	\$1 05@1 08¼	96¼c@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

There is considerable movement outward, mostly to the Orient, of contract flour. Business on local account is slow and at values much the same as have been current for some weeks past. Stocks of family and bakers' extra are liberal, as compared with the demand or immediate requirements, but superfines continue in light supply.

Superfine, lower grades.....	\$2 40@2 60
Superfine, good to choice.....	2 65@2 90
Country grades, extras.....	3 00@3 25
Choice and extra choice.....	3 35@3 60
Fancy brands, jobbing.....	3 60@3 75
Oregon, Bakers' extra.....	3 00@3 40
Walla Walla, Bakers' extra.....	3 00@3 40

BARLEY.

There is no activity to note in this cereal, and no special firmness, although quotable rates remain practically as a week ago. Trading is mainly in feed descriptions, as has been the case for some time past. A ship is now loading barley for Europe, but the cargo was in hand before the vessel was engaged, so the market is not perceptibly affected thereby. Most of the barley in this cargo is what is locally termed high-grade feed or No. 1 Call Board stock. Speculative business in barley was resumed the past week, but trading was not extensive in this line nor were fluctuations marked.

Feed, No. 1 to choice..... 72½@ 75

Feed, fair to good.....	67½@ 72½
Brewing, No. 1 to choice.....	85 @ 95
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

Supplies in this center are of fair volume and about 50% heavier than a year ago. Values remain undisturbed, so far as quotable rates are concerned, but for most descriptions there is no special firmness. Strictly fancy white feed oats continue scarce, but no great quantity of these is required to satisfy the demand at full current rates. The principal inquiry for this high grade stock is for race tracks. Low-priced colored oats receive the most attention, being relatively as cheap as barley and far more preferable for horses doing heavy work.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 12¼@1 20
White, poor to fair.....	1 05 @1 10
Gray, common to choice.....	1 07¼@1 15
Milling.....	1 15 @1 25
Surprise, good to choice.....	1 20 @1 30
Black Russian.....	90 @1 02¼
Red.....	95 @1 17¼

CORN.

The market shows much the same unsettled condition as for a week or two past, more especially for Large Yellow, which has been ruling high East lately and has not been offering freely from producers in this State. Large White is in better supply than any other variety and is at present the cheapest on the list. The crop of Small Yellow is practically cornered and buyers are given no opportunity to dictate terms.

Large White, good to choice.....	1 10 @1 12¼
Large Yellow.....	1 15 @1 17¼
Small Yellow.....	1 50 @1 60
Eastern, in bulk (carload lots).....	1 14 @1 17

RYE.

No changes to note. Offerings and demand are both at present of insignificant proportions.

Good to choice, new..... 97½@1 00

BUCKWHEAT.

Values remain nominally as previously reported. There is none arriving from any quarter and very little in the hands of local millers.

Good to choice.....	2 00 @2 10
Silverskin.....	— @ —

BEANS.

There is not much doing in beans and this is to be expected under existing conditions, stocks being too light to admit of any very active trading. Besides, the stiff views entertained by holders naturally deter buyers from taking hold freely. Inquiry is principally on Eastern account and mostly for white beans and Limas, but colored varieties are by no means wholly neglected.

Pea, fair to good, 100 lbs.....	3 35 @3 50
Small White, good to choice.....	3 35 @3 50
Lady Washington.....	3 15 @3 25
Butler, small.....	3 75 @4 00
Butler, large.....	— @ —
Pinks.....	2 65 @2 85
Bayos, good to choice.....	3 15 @3 35
Reds.....	3 75 @4 00
Red Kidneys.....	4 00 @4 25
Limas, good to choice.....	5 25 @—
Black-eye Beans.....	4 50 @4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @2 75
Garbanzos, small.....	2 00 @2 25

Late advices by mail from New York give the following review of the bean market, prices quoted being per 60-lb. bushel:

Business in most kinds of domestic beans has been on quite a restricted scale throughout the week; and while values for some varieties have been sustained, other kinds have further declined. Early in the week some expert orders for Marrow were filled at \$2.17½, shippers taking the choicest of the old stock; jobbers have paid \$2.15@2.17½ generally for best new, but a few very choice have reached \$2.20. The feeling has seemed to be a little steadier for the past two or three days, with no pressure to sell. Small sales of Pea were effected at \$2.20, but that figure never became fully established, and toward the close receivers have not hesitated to accept \$2.17½, with some good lots to be had at \$2.15. Supplies are not large, but the trade seems to be stocked up pretty well for the present. Medium have ruled quiet, but fairly steady. The accumulation of Red Kidney has been burdensome enough to cause some pressure to sell and values have been unsettled; at the close it is difficult to get over \$2.10 for the best, though some holders still ask \$2.12½. No interest to speak of in White Kidney and prices are nominally lower. Yellow Eye have declined to \$2.25@2.27½ without much business. Turtle Soup dragging heavily. Lima have held steady at \$3.55 and imported Giants are firm at \$2.75@2.80. Foreign small white beans have arrived freely, the steamer Principessa Christiana bringing 24,055 bags, but the market has held up well, best grades showing some firmness. Green and Scotch peas have ruled dull, but there has been some effort

to steady prices because of the firmer Western advices.

DRIED PEAS.

Market is inactive, as is ordinarily the case at this time of year. Stocks are small. Values are necessarily poorly defined.

Green Peas, California.....	2 00 @2 15
Niles Peas.....	2 00 @2 15

WOOL.

The wool market has not yet developed any noteworthy activity, but it may be a question of only a brief time when business will be lively. The saying that there is generally a lull before a storm is particularly applicable to the wool trade. Buyers will hold off the market for weeks, and then without a moment's warning they will pitch in headlong and buy millions of pounds within a few days. Eastern markets are reported slow and weak, which fails to lend encouragement to operators here. Quotations are based mainly on asking rates.

SPRING.

Humboldt and Mendocino.....	20 @23
Northern, free.....	16 @18
Northern, defective.....	13 @16
Middle Counties, free.....	15 @17
Middle Counties, defective.....	13 @15
Southern Mountain, 12 mos.....	12 @14
Southern Mountain, free, 7 mos.....	12 @15
Southern Mountain, defective, 7 mos.....	10 @12
Nevada, as to condition.....	16 @18

HOPS.

There is next to nothing doing in the local wholesale market in the way of transfers from producers to jobbers. The volume of business transacted through sales from second hands is not of large proportions. Supplies of choice are very light, but there is no scarcity of fair to medium qualities. Quotable values continue at previous range.

Good to choice, 1899 crop..... 6 @ 9

The following review of the hop market by a New York authority comes through by mail of a late date:

We have had another week of pretty heavy receipts, which have included 2238 bales from the Pacific coast, more than 1280 bales of which were on through bills of lading for London. The smallness of the supply in the interior of this State has turned the attention of buyers to the Pacific coast, and a good deal of stock has been moved out there recently. It is stated on reasonably good authority that the holdings in growers' hands in Oregon have been reduced several thousand bales within the past two weeks, and supplies in both California and Washington are now quite light. The New York city market has shown just a little more life. Besides fair deliveries to brewers, there has been some business between dealers, principally in Pacific coast hops, and at prices quite up to what holders have been asking of late. The tone is certainly steady, inclining to firmness, especially on the best remaining lots.

HAY AND STRAW.

The condition of the hay market has not varied materially since last review, nor is it likely to in the near future. Choice to select wheat hay sells to fair advantage, all things considered, but with this exception the market is totally devoid of strength. Occasional transfers of fancy wheat hay are made up to \$10 in a small way. Straw moves slowly at former easy rates.

Wheat.....	6 50@ 9 50
Wheat and Oat.....	6 00@ 9 00
Oat.....	6 00@ 8 00
Barley.....	5 00@ 7 00
Alfalfa.....	5 00@ 7 00
Stock.....	4 50@ 5 50
Compressed.....	6 50@ 9 50
Straw, ¾ bale.....	30 @ 40

MILLSTUFFS.

Market for Bran showed no improvement over the condition last noted, continuing to present an easy tone. Middlings were in only moderate request at full current rates. Shorts were in limited supply, but inquiry was also of a light order. Values for Rolled Barley and Cracked Corn ruled much the same as preceding week.

Bran, ¾ ton.....	11 50@12 50
Middlings.....	15 00@18 00
Shorts, Oregon.....	13 00@15 00
Barley, Rolled.....	16 50@17 00
Cornmeal.....	23 50@24 00
Cracked Corn.....	24 50@25 00

SEEDS.

There is not much stock of any description offering, and little opportunity for any special activity. The business doing is mainly of a small jobbing character and generally within range of unchanged figures.

	Per ctt.
Mustard, Trieste.....	3 25@3 50
Mustard, Yellow.....	4 50@4 75
Flax.....	2 00@2 25
	Per lb.
Canary.....	3¼@ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4½

Timothy.....	4 @ 4½
Alfalfa, Utah.....	9 @10

BAGS AND BAGGING.

The Grain Bag market is ruling steady but very quiet, some heavy dealers preferring this condition of affairs at this time of year, as it affords better chances to boom values at harvest period by keeping importations down to the minimum. Wool Sacks are in moderate request at unchanged rates. For less than bale lots an advance on quotations is asked.

Calcutta Grain Bags, buyer June-July.....	6¼@—
Calcutta Grain Bags, spot.....	6¼@—
San Francisco Grain Bags, 22x36, spot.....	6¼@—
State Prison Bags, ¾ 100.....	5 65@—
Wool Sacks, 4 lbs.....	—@22¼
Wool Sacks, 3½ lbs.....	—@28¼
Fleece Twine.....	7¼@—
Gunnies.....	—@12¼
Bean Bags.....	4½@ 5¼
Fruit Sacks, cotton.....	6¼@ 7¼

HIDES, PELTS AND TALLOW.

Hide market is showing more firmness, especially for Wet Salted. Pelts are ruling quiet and market rather easy in tene, without being quotably lower. Tallow values are fairly steady, with offerings not particularly heavy.

HONEY.

Stocks of last crop are nearly exhausted, with present business in the same mainly of a light jobbing character at practically same rates as lately current. New crop is expected to put in an appearance in quotable quantity inside of thirty days. The yield north of Tehechapi will be a fair average, but very light south of the point named.

Extracted, White Liquid.....	7¼@ 8
Extracted, Light Amber.....	7 @ 7¼
Extracted, Amber.....	5 @ 5¼
White Comb, 1½ frames.....	11¼@12¼
Amber Comb.....	8 @10

BEESWAX.

The market continues to be very lightly stocked and is firm at current rates.

Good to choice, light, ¾ lb.....	26 @27
Dark.....	24 @25

LIVE STOCK AND MEATS.

There are no material changes to record in quotations or the general tone of the market, although in consequence of the closing of the Lenten season, prospects are favorable for the development of a little more firmness in the immediate future for most descriptions of meats.

Beef, first quality, dressed, net ¾ lb.....	6¼@ 7
Beef, second quality.....	6¼@—
Beef, third quality.....	6 @—
Mutton—ewes, 6¼@7c; wethers.....	6¼@ 7¼
Hogs, hard grain fed, medium.....	5¼@ 5½
Hogs, small, fat.....	5¼@ 5½
Hogs, large, hard.....	5¼@ 5½
Hogs, acorn-fed.....	—@—
Hogs, feeders.....	5 @—
Hogs, country dressed.....	5¼@ 6
Veal, small, ¾ lb.....	6 @ 8¼
Veal, large, ¾ lb.....	7 @ 8
Lamb, spring, ¾ lb.....	9¼@10

POULTRY.

Immediately following last review, the market showed more firmness, under decreased receipts and very fair demand. Conditions since have continued very favorable for the selling interest, especially for medium size to full grown young fowls in fine condition, such being in best request and most limited supply.

Turkeys, dressed, ¾ lb.....	— @ —
Turkeys, live hens, ¾ lb.....	12 @ 13
Turkeys, live gobblers, ¾ lb.....	10 @ 11
Hens, California, ¾ dozen.....	4 50 @5 50
Roosters, old.....	4 25 @4 50
Roosters, young (full-grown).....	6 00 @7 00
Fryers.....	5 50 @6 00
Broilers, large.....	4 50 @5 00
Broilers, small.....	2 50 @3 50
Ducks, old, ¾ dozen.....	4 50 @5 50
Ducks, young, ¾ dozen.....	5 50 @7 50
Geese, ¾ pair.....	1 75 @2 00
Goslings, ¾ pair.....	2 25 @2 50
Pigeons, old, ¾ dozen.....	1 75 @2 00
Pigeons, young.....	1 75 @2 00

BUTTER.

While quotable rates are lower than last noted, the market cannot be termed weak at the decline. There is considerable but-

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ter now being packed, both here and in the interior, and for this purpose values for dairy product are being better sustained relatively than for the higher priced creamery stock.

Creamery, extras, # lb.	17 1/2 @—
Creamery, firsts.	17 @—
Creamery, seconds.	16 @—
Dairy, select.	16 @16 1/2
Dairy, seconds.	15 @15 1/2
Dairy, soft and weedy.	— @—
Mixed store.	13 1/2 @14
Creamery in tubs.	18 @—
Pickled Roll.	— @—
Firkin, California, choice to select.	18 @19
Firkin, common to fair.	16 @17

CHEESE.

Mild flavored new is offering in much more liberal quantity than is warranted by the immediate demand, as most of this cheese is suitable only for local use, being too soft to ship. Market for new is weak at quotations. Old is so scarce as to be hardly quotable in a regular way.

California, fancy flat, new.	8 @—
California, good to choice.	7 1/2 @—
California, fair to good.	7 @—
California Cheddar.	— @—
California, "Young Americas".	7 1/2 @ 9

EGGS.

Although Easter week was on, with an active demand from consumers, there was less inquiry on speculative or packing account than for some weeks preceding, and market showed really less activity than immediately prior to last review. Two carloads of Eastern eggs arrived, the first importations of the season.

California, select, large, white and fresh.	16 @—
California, select, irregular color & size.	15 @15 1/2
California, good to choice store.	14 @14 1/2
Eastern, as to section and grading.	14 @16
Eastern, cold storage.	— @—

VEGETABLES.

Market for most kinds of Spring and early Summer vegetables did not show any great variation from the condition of previous week. Changes in quotable rates were not numerous or marked. Onions were in very scanty stock and commanded still higher rates than last quoted. A lot about 300 crates of Australian Onions were taken by one buyer at \$8.25 per cental.

Asparagus, # box.	1 00 @2 00
Beans, String, # lb.	5 @ 8
Cabbage, choice garden, # 100.	40 @—
Cauliflower, # dozen.	50 @—
Cucumbers, hothouse, # doz.	50 @1 00
Egg Plant, # lb.	6 @ 8
Garlic, # lb.	3 @ 5
Onions, Yellow, Cal., good to choice.	— @—
Onions, Oregon, # cental.	5 50 @6 50
Peas, Sweet, garden, # lb.	2 1/2 @ 3
Peas, Green, # sack	1 00 @1 75
Peppers, Green Chile, # lb.	15 @—
Peppers, Bell, # lb.	— @—
Rhubarb, # box.	50 @1 25
Squash, Summer, # box.	75 @1 00
Tomatoes, Southern, # box.	1 00 @1 50
Tomatoes, Bay, # box.	— @—

POTATOES.

Heavy stocks of common qualities of old, mainly Oregon Burbanks, are cumbering the market, and prices for these are low and irregular, buyers having very much their own way. Strictly choice were not plentiful and brought from special custom comparatively good figures. New potatoes were in only moderate receipt and did not include many which were sufficiently ripe to be desirable.

Burbanks, River, # cental.	40 @ 80
Burbanks, Bay counties, # cental.	40 @ 85
Burbanks, Humboldt.	60 @ 85
Burbanks, Oregon.	50 @ 90
River Reds.	75 @ 85
Early Rose.	75 @ 85
Garnet Chile.	80 @ 90
New Potatoes, # cental.	1 25 @2 00
Sweet, River, # cental.	— @—
Sweet, Merced.	2 00 @2 25

The Fruit Market.

FRESH FRUITS.

The Apple market is very lightly stocked, principally with cold storage supplies, asking rates for which remain practically unchanged, although there is no special firmness, as trade is being diverted to other more seasonal fruits which are putting in an appearance. Strawberries are beginning to make a very fair display, the quantity increasing and the quality improving, with tendency of prices in favor of consumer. Blackberries were in light receipt from Covina, selling mainly at \$2 per crate. San Leandro Raspberries were quotable in a small way at \$1.25 per drawer.

Apples, fancy, 4-tier box.	1 75 @ 2 25
Apples, good to choice, # 50-lb box.	1 50 @ 1 75
Apples, common to fair, # 50-lb box.	75 @ 1 25
Strawberries, Longworth, # chest.	10 00 @13 00
Strawberries, Large, # chest.	3 00 @ 6 00

DRIED FRUITS.

No new features have been developed in the market for cured and evaporated fruits since last report. Trade is slow and mostly of a light jobbing character. While prices realized are sufficiently close to the figures lately current to not justify making any special changes in quotations, the market for most kinds is not firm at the figures quoted, and especially is this the case as regards Apples and Peaches. There is very little doing in Apples at any figure. Occasional transfers of Peaches are effected by making terms decidedly favorable to buyers. The coming Peach crop promises to be heavy not only on this coast, but also in the southern Atlantic States, which naturally imparts a weak tone. In fact, the fruit crop outlook as a whole in this and adjoining States has seldom been as good at corresponding date as it is this year. There is naturally no inducement for wholesale dealers or jobbers to purchase at present in other than a hand-to-mouth way. It is hoped that the quantity required for immediate consumption will relieve the market of most of the existing supplies during the next sixty days, but there is certainly no reason at present to anticipate any shortage. Prunes continue, as for some weeks past, to receive more attention than any other fruit, and while there is a slightly better tone to the market for this variety, there is no improvement to record in quotable rates. Small Prunes are in too scanty supply for the four sizes to be at present quotable. Small are difficult to obtain under 2 1/2c, and there are very few at any figure. Medium sizes are going mainly at 3@3 1/2c, showing the range of values at present to be unusually narrow.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb.	10 1/2 @12
Apricots, Royal, fancy.	12 1/2 @13
Apricots, Moorpark.	13 @15
Apples, in 50-lb boxes, rings, pressed, fancy.	7 @—
Apples, 50-lb boxes, rings, pressed, good to choice.	5 1/2 @ 6 1/2
Figs, White, fancy pressed.	5 1/2 @ 3 1/2
Peaches, unpeeled, good to choice.	5 @ 6
Peaches, unpeeled, fancy.	7 @ 7 1/2
Peaches, peeled, in boxes.	12 1/2 @15
Pears, unpeeled Bartlett's, halved, fancy.	9 @ 9 1/2
Pears, halved, unpeeled Bartlett's.	6 1/2 @ 7 1/2
Pears, quartered, unpeeled Bartlett's.	6 1/2 @ 7 1/2
Plums, Black, pitted.	6 1/2 @ 7 1/2
Plums, White and Red.	7 @ 8
Prunes, in sacks 40-50s.	3 1/2 @ 4
50-60s.	3 1/4 @ 3 1/2
60-70s.	3 1/4 @ 3 1/2
70-80s.	3 @ 3 1/4
Prunes in boxes, 1/2c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.	— @—
4 sizes Santa Claras and equal.	— @—
4 sizes San Joaquin and Northern.	— @—
Prunes, Silver.	4 @ 7

COMMON SUN-DRIED.

Apples, sliced.	4 @ 5
-----------------	-------

Apples, quartered.	4 @ 5
Figs, Black.	— @ 3
Figs, White.	3 @ 3 1/2
Peaches, unpeeled.	5 @ 6

Recent advices by mail from New York furnish the following report of the dried fruit market in the East:

The demand for evaporated apples is generally light, though some stock is steadily changing hands and on the whole a fair business has been accomplished. Strictly prime wood-dried still have a possible value of 6c, but it is very extreme and 5 1/4 @ 5 1/2c the more general price, with some wet or damp stock lower. Strictly choice or fancy are held at about late figures, holders of high-grade fruit not appearing willing to shade prices further at present. Desirable sun-dried apples are held very high, generally above figures quoted, and this causes export buyers to show more interest in low-grade evaporated, and considerable stock has been shipped abroad at a cost of about 5c, quality a little under prime, though some cheaper goods have sold lower, one lot as low as 3 1/2c. Strictly fancy sun-dried sliced or quarters are held at 5 1/4 @ 5 1/2c, but latter figure very extreme, and for average stock available 4 1/2 @ 5c is about all that can be realized, with some obtainable lower. Choice heavy chops are scarce and held firmly at \$1.45 @ 1.50 and desirable waste at \$1, but anything wet or damp or otherwise unattractive ranges lower and stock in bags also has to be shaded in price. Small fruits scarce and held firmly. California fruit selling slowly at about late prices.

Apricots, Cal, Moorpark, 1899, # lb.	15 @18
Apricots, Cal, Royal, 1899, # lb.	12 1/2 @13 1/2
Peaches, Cal., 1899, peeled, # lb.	16 @20
P. aches, Cal., 1899, unpeeled, in bxs, # lb.	8 @ 9
Peaches, Cal., 1899, unpeeled, in bags, # lb.	7 1/2 @ 9
Prunes, Cal., 1899, # lb.	3 1/2 @ 7

RAISINS.

Little doing in this line. While the trade is not carrying many raisins at present, most dealers have probably enough to last them through the season. Card rates as fixed by the Growers' Association remain unchanged, but owing to the prevailing inactivity, values for the time being are largely nominal.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, # box.	1 60 @—
do do 2-crown, # box.	1 50 @—
Valencia Layers, # 20-lb box.	80 @1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.	6 1/4 @—
Loose Muscatel, seedless.	5 @—
Pacifics.—2-crown loose Muscatel, 5 1/2c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c.	
Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.	
(Above prices for loose raisins are for 50-lb. boxes.)	
Thompson Seedless.—Bleached fancy, # lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.	
Sultanas.—Bleached fancy, # lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.	
Loose Valencias.—Fancy, # lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.	
Valencia Clusters.—Fancy, # lb., 7c; choice, 6c; standard, 5c.	

CITRUS FRUITS.

Oranges were in a little better supply than preceding week, but stocks did not prove excessive, the demand continuing good and market remained firm, especially for choice to select Navels, these receiving the most attention from consumers. Lemons were in fair request at generally unchanged rates, but supplies proved more than ample for immediate requirements and the market could not be termed firm. Limes were in increased stock, a fresh invoice arriving from Mexico, and market was quotably lower.

Oranges—Navels, fancy # box.	3 00 @3 50
Navels, good to choice.	2 50 @3 00
Navels, common to fair.	1 50 @2 50
California Seedlings.	1 00 @2 00

Lemons—California, select, # box.	2 25 @2 50
California, good to choice.	1 50 @2 00
California common to fair.	1 00 @1 25
Limes—Mexican, # box.	4 50 @5 00
California, small box.	50 @1 00

NUTS.

The Almond market is moderately firm at the prevailing quotations, with no heavy offerings at present. The coming yield in this State, however, promises to be the largest on record. On the other hand, the European crop is reported to have suffered some damage. Walnut market is quotably unchanged, with very few now offering and inquiry light. Peanuts are in slim stock and market inclines against buyers.

California Almonds, shelled.	14 @17
California Almonds, paper shell, # lb.	10 @12
California Almonds, soft shell.	8 @ 9
California Almonds, hard shell.	4 @ 5
Walnuts, White, soft shell.	9 @10
Walnuts, White, California, standard.	7 @ 8
Chestnuts, California Italian.	8 @10
Peanuts, California, fair to prime.	5 @ 6
Peanuts, Eastern, hand-picked.	6 @ 6 1/2
Pine Nuts.	5 @ 6

WINE.

Market continued quiet and is not particularly firm, although in consequence of some damage this week to vineyards by frost, there is less selling pressure. The large dealers are not competing against each other, and as a rule buy only when they can name their own terms, their bids being mostly within range of 14 @ 17c. per gallon for new dry wines delivered in this city. The exceptions are where special lots are wanted for the filling of shipping orders. One grower realized the past week the equivalent of 17 1/2c per gallon, the wine being wanted for Germany. Some producers having very choice stock are holding out for 20c. per gallon. Monday's Panama steamer carried 200,341 gallons and 50 cases, of which 192,000 gallons were destined for New York.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/2 sacks.	138,730	4,971,099
Wheat, centals.	186,087	5,402,350
Barley, centals.	19,625	4,587,484
Oats, centals.	4,255	665,558
Corn, centals.	7,150	111,815
Rye, centals.	245	91,997
Beans, sacks.	6,206	340,741
Potatoes, sacks.	25,887	1,043,827
Onions, sacks.	824	139,767
Hay, tons.	1,610	129,503
Wool, bales.	2,076	40,995
Hops, bales.	18	9,445

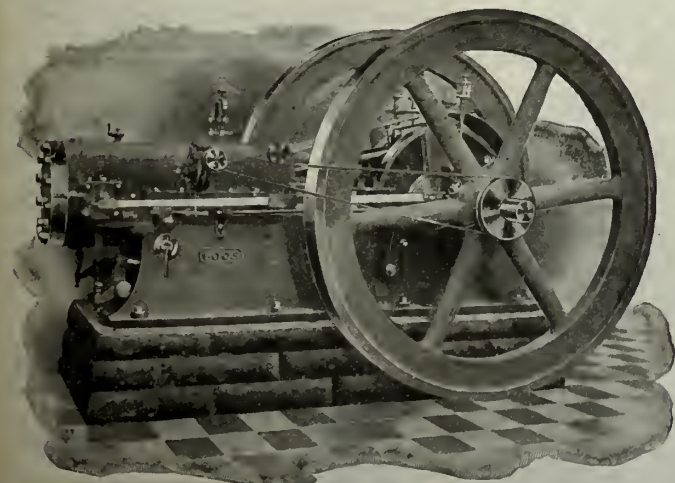
EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/2 sacks.	91,876	3,367,202
Wheat, centals.	256,111	4,832,631
Barley, centals.	686	3,652,904
Oats, centals.	177	37,988
Corn, centals.	84	16,317
Beans, sacks.	381	23,021
Hay, bales.	520	100,748
Wool, pounds.	—	4,324,433
Hops, pounds.	8,640	977,153
Honey, cases.	2	3,422
Potatoes, packages.	3,262	66,196

California Dried Fruit at New York.

NEW YORK, April 11.—Evaporated apples, common, 4 1/2 @ 5c; prime wire tray, 5 1/2 @ 6c; choice, 7 @ 7 1/2c; fancy, 7 1/2 @ 8 1/2c. California dried fruits quiet but fairly steady at former prices. Prunes, 3 1/2 @ 6c. Apricots, Royal, 13 @ 15c; Moorpark, 15 @ 18c. Peaches, unpeeled, 7 1/2 @ 9c; peeled, 18 @ 22c.

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THE VETERINARIAN.

Answers by Dr. Creely.

THROAT OR MOUTH TROUBLE.

TO THE EDITOR:—What is the probable trouble with this heifer? She was two years old last January. Her first calf is about six weeks old, large, strong and apparently in good health. The heifer has an offensive breath, coughs occasionally, generally about twice in succession as if clearing her throat, but not violent. The glands of the throat are not swollen, neither is she choked. She is shedding nicely, is in fair flesh for a good milker, and improving. She is lively and has a good appetite, and from all outward appearance is in good health. Is her milk fit for use, and what shall I do for her?—GEO. J. HATCHER, Butte City.

It is some mouth or throat trouble. The discharge acts as an irritant to the larynx, causing the cough, and while coughing the odor is most noticeable. Use the following electrolyte: Chlorate potash, 6 ozs.; powdered boracic acid, 2 ozs.; powdered alum, 1/2 oz.; powdered licorice root, 2 ozs.; powdered willow charcoal, 2 ozs.; honey, 1 pint. Mix, and apply a tablespoonful two or three times daily on tongue and around mouth with a flat stick.

TREATMENT FOR PINK EYE.

TO THE EDITOR:—Please give me prescription for cattle with the "pink eye."—ONE OF YOUR READERS, Merced.

Take one ounce of borax to one pint water and give thorough saturation of the eyes several times daily, after which use the following prescription: Zinc sulphate, 6 grains; powdered alum, 12 grains; atrop. sulphate, 10 grains; distilled water, 2 oz. Inject into the eye after the borax bath.

A BAD TOOTH.

TO THE EDITOR:—I have a valuable horse with what I suppose to be a sort of distemper. He had a cough a while ago, but got over it, though he still has an offensive discharge from one side of his nose occasionally. He is well otherwise. I would like to know what to do to cure the discharge, which is very disagreeable.—SUBSCRIBER, Saratoga.

The discharge and odor are caused by an ulcerated molar. Trephine the maxillary sinus and wash out with a solution of permanganate of potash.

DR. E. J. CREELY.

510 Golden Gate Ave., S. F.

Storage of Water on Gila River, Arizona.

Water Supply and Irrigation Paper No. 33, "Storage of Water on Gila River, Arizona," by J. B. Lippincott of Los Angeles, Cal., resident hydrographer of the United States Geological Survey, has been issued. This paper describes the reservoir sites along Gila river, the water supply, exploration for bedrock with diamond drill, cement tests, and gives estimates of cost of construction of various dams. It is illustrated by views and diagrams, together with maps of reservoir sites and details of dam construction. Application for the paper should be made to members of Congress, by whom 4000 copies of the 5000 printed are distributed, or to the director of the United States Geological Survey, Washington, D. C.

The Manhattan Food Co.

This well-known stock food manufacturing company has established itself in new and commodious quarters at No. 1253 Folsom St., San Francisco. The excellence of the specialties prepared by this company is too well known to require comment. Circulars and information may be obtained by addressing C. P. Kertell, manager, at the above address.

Prince's Bay, N. Y., July 17, 1893.

Dr. Tuttle, Sir:—You will please send me one dozen bottles of your Elixir. Don't send me the family Elixir. I want the same as I had before, for the horse. It took the splint off from his leg as nice as anything. Now mind the express directions this time, because I am in a hurry.

H. L. ALLEN, Pleasant Plains, N. Y.

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Breeders' Directory.

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TRACY POULTRY YARDS, Tracy, Cal. Wm. M. Langdon, Prop. Specialties: B. P. Rocks and S. C. W. Leghorns. Eggs \$1.50 per 15. Closing out one-year-old Plymouth roosters at \$1.50 each. Bargains. Write for prices. Fill Your Incubator—Eggs from fine thoroughbred stock \$5.00 per 100.

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SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Buff Cochins, Barred Plymouth Rocks, White and Brown Leghorns, White Wyandottes, Black Minorcas.

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WILLIAM NILES & CO., Los Angeles, Cal. Poultry, Belgian Hares. Imported pedigree stock.

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STANDARD-BRED PEDIGREED BELGIANS. Fine Does, bred or unbred. Youngsters from best strains, all ages. Booklet free. Britain Rabbitry, Watsonville, Cal.

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BELGIAN HARES. Write to Fred S. Gifford, Manager Palo Alto Rabbitry, 103 California Market, San Francisco, for quotations and information concerning Belgian Hares.

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JUST AS NATURAL as the oldhen and a good deal more reliable. Doesn't break the eggs or make the chicks lousy. Doesn't stay off the nest and allow the eggs to chill but hatches every egg that can be hatched. **THE PETALUMA INCUBATOR** is absolutely perfect as to incubator essentials—proper application and distribution of heat and moisture, regulation and ventilation. For 54 to 324 eggs. **WE PAY FREIGHT ANYWHERE** in the U.S. Handsome catalog free. Petaluma Incubator Co., Box 19 Petaluma, Cal.

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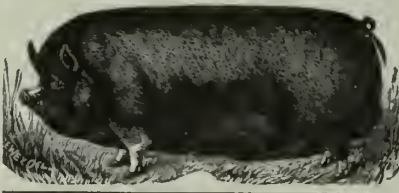
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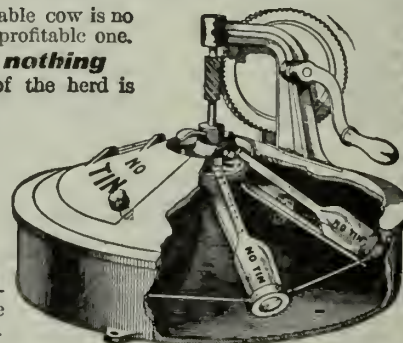
The expense of feeding a profitable cow is no more than the cost of feeding an unprofitable one. **It costs comparatively nothing** to find out whether each member of the herd is profitable. The

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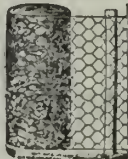
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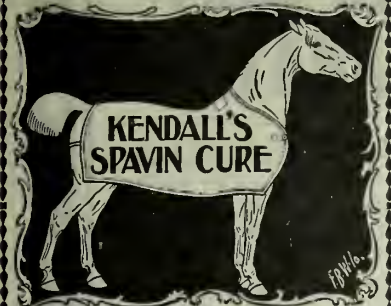
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Yours truly, H. A. LAWRENCE.

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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR WEEK ENDING MARCH 27, 1900.

- 646,161.—BICYCLES—J. D. Atkinson, Seattle, Wash.
- 646,343.—ROCK DRILL—R. Avery, Sausalito, Cal.
- 646,262.—WOOD PLANE—H. M. Coe, Phoenix, A. T.
- 646,090.—GAS BURNER—J. P. Farmer, Portland, Ogn.
- 646,049.—ELEVATOR—E. M. Fraser, S. F.
- 646,385.—HYDROCARBON BURNER—M. O. Godding, Monrovia, Cal.
- 646,386.—HYDROCARBON BURNER—M. O. Godding, Monrovia, Cal.
- 646,054.—SOOT DISPERSER—J. C. Lohmeyer, S. F.
- 646,004.—SEEDER—A. J. Malsbary, Stockton, Cal.
- 646,030.—AIR COMPRESSOR—J. D. McKinnon, Portland, Ogn.
- 646,031.—AIR COMPRESSOR—J. D. McKinnon, Portland, Ogn.
- 646,095.—TRACE EYE GUARD—W. P. Murphy, San Jose, Cal.
- 646,233.—DOOR LOCK—A. Newell, Pasadena, Cal.
- 646,098.—LEVEL—M. Nilson, Oakland, Cal.
- 646,156.—EASEL SUPPORT—G. A. Peterson, S. F.
- 646,374.—MOTOR FOR VESSELS—R. T. Power, Westminster, Canada.
- 646,239.—BUTTON FOR SLIDING DOORS—D. Schuyler, San Diego, Cal.
- 646,391.—PROPELLING APPARATUS—F. W. Simmons, Felton, Cal.
- 645,979.—TRUNK TRAY—Sara B. Smith, Livermore, Cal.
- 645,980.—TRUNK—Sara B. Smith, Livermore, Cal.
- 646,059.—NUT LOCK—J. W. Stanley, Yuba City, Cal.
- 646,327.—DRYING ROOM—J. H. Therien, S. F.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

ROCK DRILL.—Russell Avery, Sausalito, Cal., one-half assigned to H. C. Campbell, San Francisco, Cal. No. 646,343. Dated March 27, 1900. This invention relates to improvements in apparatus for drilling rock and the like. It consists in means for maintaining the drill at any desired angle, and providing for means for moving it transversely, and returning it without disturbing the angle, and means for connecting the drill with the striker, so that the movement of striking the drill serves to rotate and raise it intermediate of each stroke. The object of this is to enable the hammer wielder to turn the drill without the assistance of a second man, as is shown in hand drilling, and by this connection each backward swing of the body in raising the hammer will pull upon the cord and by the connection will turn the drill.

NUT LOCK.—J. W. Stanley, Yuba City, Cal., one-half assigned to J. W. Ashley, same place. No. 646,059. Dated March 27, 1900. This invention relates to a de-

vice for locking nuts after they have been screwed upon bolts, so as to prevent their jarring or otherwise turning loose upon the bolt. It consists of a plate having holes made through it to receive the bolt, and slots cut in the ends of the plate parallel with each other and with the side edges, and forming a plurality of independent tongues which are adapted to be turned up against the sides of the nut. Similar slots are made at any point within the length of the plate so that when a nut has been put upon a bolt at such point, the edges of the strips cut away by the slots can be turned up against the sides of the nut to prevent its turning. By turning the flaps down the nut can be turned to either release it, or turn it further upon the bolt, and the flaps again turned up.

SOOT DISPERSING ATTACHMENT FOR BURNERS.—J. C. Lohmeyer, San Francisco, Cal. No. 646,054. Dated March 27, 1900. This device is intended to prevent the blackening of ceilings by smoke or soot produced from lamps, gas or other burners. In the use of lighting appliances, a great difficulty arises from the gradual deposit of soot at points upon the ceiling above the burner. This apparatus consists of a wheel having angularly placed vanes, and means for turnably suspending it above the burner so that the rising heat will cause it to rotate in a horizontal plane, and its rotation in this manner serves to disperse the soot, and cause it to pass off above the line of the upwardly moving heat, and being out of this line, it will drop harmlessly to the floor, and will not reach the ceiling.

Industrial Notes.

—The Santa Fe road is built from Bakersfield, Cal., to San Francisco bay.

—The gross earnings of the Canadian Pacific Ry. for the year 1899 were \$29,230,038.26; working expenses, \$16,999,872.77; net earnings, \$12,230,165.49.

—At Pittsburg the price of coal advanced from 25% to 50% on the 1st. The advance is attributed to the increased wages of the miners, and the coal famine in the East and in Europe. Operators can hardly fill orders.

—The contract for building the South-western railroad system in the State of Yucata, Yucatan, has been let to Porfirio Diaz, Jr., son of President Diaz; he will put 3000 men to work constructing the line as soon as the Government approves the plans.

—Alabama has sold England 2,000,000 tons coal, for \$1.50 per ton, delivered at New Orleans. Coal in Germany has advanced 40% within a year; the Welsh collieries can no longer supply European navies. Nagasaki, Japan, is importing coal from Virginia.

—Ex-Senator Warner Miller has been in Phoenix, Arizona, looking up, on behalf of New York clients, the capabilities of the Salt river valley and the cities of Phoenix, Tempe and Mesa for financial support for a great water storage dam, to be built in the canyon of Salt river, sixty-five miles east of Phoenix, where the stream is joined by the waters of Tonto creek. It is understood he will recommend the investment of the necessary capital, approximating \$2,000,000.

—San Francisco is considering a proposition made by Von Schmidt, Dillman & Hunt to bring into San Francisco, at a cost of \$25,000,000 to be paid by the city, a supply of 60,000,000 gallons per day of fresh mountain water drawn from Lake Tahoe, lying on the eastern slope of the Sierras: a restraining dam to be constructed across the Truckee river, a diverting canal built to a point several miles below the dam and a tunnel run under the summit of the mountain range, to deliver the water at a point on the American river, where a reservoir would be constructed, from which the water would be conducted in steel pipes to San Francisco.

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for all time is the

Metal Wheel.

We make them in all sizes and varieties, 14" FIT ANY AXLE. Any height, any width of tire desired. Our wheels are either direct or stagger spoke. Can FIT YOUR WAGON perfectly without change.

NO BREAKING DOWN.
No drying out. No resetting tires. Cheap because they endure. Send for catalogue and prices. Free upon request.

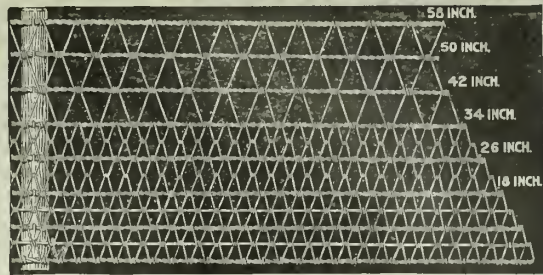
Electric Wheel Co.
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Any size wanted, any width of tire. Hub to fit any axle. For catalogue and prices write Empire Manufacturing Co., Quincy, Ill.

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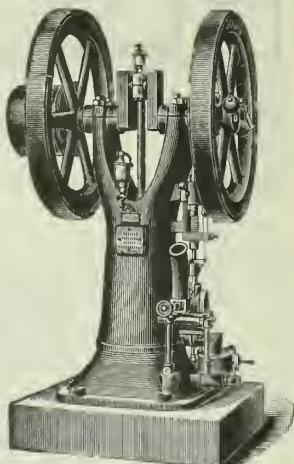
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2 1/2 Horse Power Webster Gasoline Engines, \$185. We carry all sizes of Gasoline Engines from 2 1/2 to 12 Horse Power.

We carry Pumps for all depths of Wells—for Hand, Wind Mill use, Power Pumps, Electric Pumps. Irrigating Pumps of all capacities. Tanks. Iron Pipes. Pipe Fittings. Brass Goods. Tools, etc.

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The Most Powerful Made.

Adapted to Hillside or Level Lands.

Extensively used in the Pacific States, Mexico, Central America, and the Hawaiian Islands.

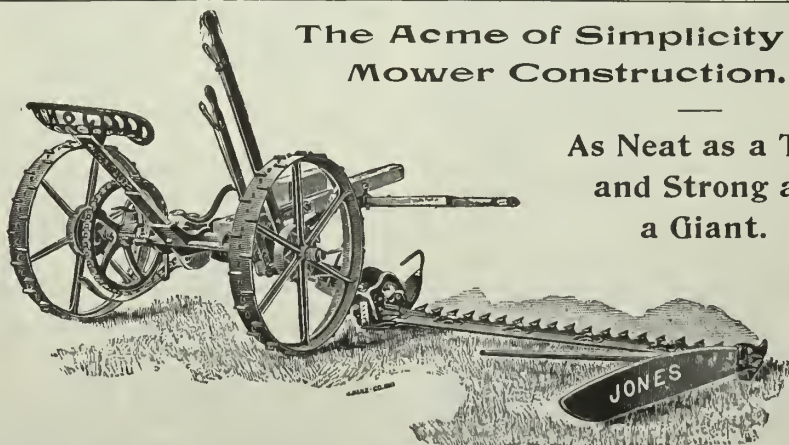
English Plow Steel Cable, Hand Forged Chains, Patent Steel Snatch Blocks, and Draft Hooks.

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The Acme of Simplicity in Mower Construction.

As Neat as a Toy and Strong as a Giant.



THE JONES CHAIN MOWER.

No Noise. No Vibration. No Lost Power. No Cog Wheels to Wear Out.

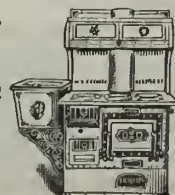
Everybody knows that the sprocket and chain produces far less friction than cog wheels; that they are longer lived; that the application of power is more direct. Then why buy a geared mower that may work well enough when it is new and the gears fit closely? But it soon commences to wear, loss of motion occurs, and in a short time you need a new mower. WRITE FOR PRICES.


THE H. C. SHAW COMPANY, State Agents, STOCKTON, CAL.

\$50.00 RANGE FOR \$25.00

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TRIUMPH STEEL RANGE Into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21 1/2 inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. **WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo.** Will ship C. O. D. with privilege of examination.





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may be had,
the

Mica Axle Grease

that makes your
horses glad.

Made
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Patrons of Husbandry.

The Political Responsibilities of Farmers.

TO THE EDITOR:—As the time approaches for primary elections in this State, at which delegates will be chosen to county and congressional conventions, which delegates will have the nominating of legislative and congressional candidates in the different parties, it is important that members of the Grange and other farmers in this State should use their best endeavors to have delegates elected at the primaries in their own parties who represent farming interests and who will nominate such candidates to the State Legislature and to Congress as can be relied upon to carry out the wishes of their constituents.

Farmers, put up good, reliable men of your own class, men who command the respect of the community in which they live, men who are able to make a good speech and to argue and hold their own with the shrewd, practical politician—the man who makes politics a profession, usually a second-class lawyer, who is in politics for what there is in it. If farmers ever expect to obtain legislation favorable to their interests from Congress, in the shape of postal savings banks, a national pure food law, an effective anti-trust law, a law controlling railroad charges, a law prohibiting gambling on grain and provisions, a constitutional amendment requiring United States Senators to be elected by popular vote, a law to secure the speedy construction and ownership of the Nicaragua canal by the United States Government, and an increase in the appropriation to further extend the delivery of free mail in the rural districts, they must see to it that men of their own calling are elected to represent them at Washington.

Aside from the pending national issues, upon which there is an honest difference of opinion, farmers are intensely interested and practically united upon many important economic questions; prominent among them is the question of taxation. Farmers want to know how to meet the present high rates of taxation with decreasing receipts from the farm. They want to know why taxes should not be assessed equally upon all kinds of property. They want to know why official salaries, under existing conditions, should be at the highest point ever reached in this State. They want to know why the demand for retrenchment in State expenditures is not heeded by our legislators. They want to know why the State Railroad Commission does not exercise the authority given it under our laws in preventing the railroads of the State from raising their rates of transportation when it suits their convenience. If this commission can not be made of service to the public, it should be abolished. What service has the Highway Commission, at an expense of over \$11,000 annually, rendered to the State? It has failed to accomplish anything, except to draw salaries and report. This commission should be abolished. What necessity is there for an attorney to the State Board of Health at a salary

of \$3000? It is asserted on good authority that from \$5000 to \$10,000 in the shape of salaries can be cut off from nearly all the State offices, and their efficiency be in no way impaired. And so in regard to the State University. While the people of California are disposed to be liberal in the expenditure of money raised by taxation for the purposes of education, yet they demand that such expenditure shall be applied in an economical manner. The Harbor Commission at San Francisco, according to the report of a Senate committee appointed three years ago, has been the cause of more leaks from the public treasury than any other. It spent \$350,000 more on the ferry depot than was originally contemplated, because of the failure to include the foundation in the first estimates. This had made it necessary to use the money of the harbor improvement fund, which resulted in the stoppage of work for several years on the seawall. The commission had from fifty to seventy-five absolutely useless employes on the payroll. In three instances employes were carried in two capacities and drew two salaries. There was also a purchasing department maintained at a cost of \$9000 a year, the purchases by this department amounting to only \$22,000. There is no occasion for the employment of a harbor police force, it being the duty of the city to protect the property.

Farmers, if you will nominate and elect reliable representatives to the next Legislature, you can reduce the amount of money necessary to be raised by taxation for State purposes by at least \$500,000, as shown above.

The salaries of the county officials of the various counties of the State can be justifiably reduced in many instances and fees that are now paid to county officials turned into the public treasury, thus saving to the taxpayer another \$500,000, making a clear saving of \$1,000,000 per annum.

Is the farmer capable or qualified to have a voice in the formation of laws which are to regulate his financial interests? We say yes; and he is personally responsible for not having more tillers of the soil in State and national legislative halls.

Grange members understand, and their influence is extending to all farmers, that they are the judges on all matters affecting their interests, whether they be local, State, national or international. They are beginning to see and feel that their sacred rights have been trodden under foot by designing men. They are no longer willing that the politician, or any one else, should think for them and tell them what to do. They propose to analyze all questions for themselves and use their influence in legislation, State and national, to crystallize into laws such legislation as they may find necessary to place agricultural interests on an equality with the other industries of the country.

There never has been a time in the history of this country when farmers have taken as much interest in questions affecting their interests as at present. Farmers have also learned to stand by, work for and maintain their rights in the great battles of trade and in the interchange of commodities. This independent, self-reliant spirit will give new vigor and importance to the agricultural classes and secure for them fairness in the interchange of commodities and fair and just legislation.

The farmer recognizes that the foundation and perpetuity of this great republic rest on the rights of the individual man, whether that man is rich or poor, laborer, mechanic, lawyer, professor, merchant or farmer. If the rights of the individual be surrendered, or if the individual man be robbed of his right by combinations of men or combinations of money, or by law, then the individual ceases to be a free man, but exists as a slave, and the crowning glory of the republic has departed.

J. S. TAYLOR,
Lecturer California State Grange.
Napa, April 7.

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DEALERS IN PAPER,
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NEW STYLES, CAPACITIES AND PRICES.

Old Style "Hollow-Bowl" Baby No. 1,	150 lbs.,	\$50.00
Old Style "Strap" Humming-Bird,	175 lbs.,	50.00
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Improved Iron-Stool Baby No. 2,	450 lbs.,	125.00
Improved High-Frame Baby No. 2,	450 lbs.,	125.00
Improved High-Frame Baby No. 3,	850 lbs.,	200.00
Improved Dairy Steam-Turbine,	850 lbs.,	225.00

Send for "20th Century" catalogue.

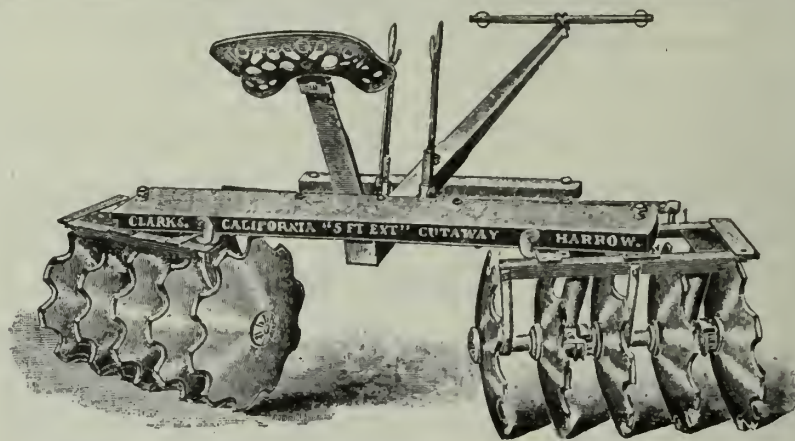
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No Repairs in Two Years and Runs as Smoothly as when New

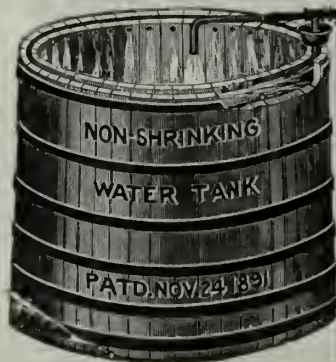
CHERRY VALLEY, WASH., Jan. 12, 1900.

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WILLIAM FINLAY.

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Women as Inventors.

Ancient tradition—which, unfortunately, we have no means of verifying—ranks women pre-eminently as an inventor, and the Chinese still continue to worship Siling-chi, the goddess of silkworms, in commemoration of the discovery of silk by one of their empresses 4000 years before the Christian era. In India there is a temple, known as the Light of the World, dedicated to Nourmahal, the gifted princess who first gave to the world cashmere shawls and the perfume attar of roses. It is also alleged that gauze was first invented by Pamphili, a woman of Cos, in the time of the Roman Empire, and that (of more recent date) Madame Bessani, a working woman of Italy, received a patent for the first Venetian point lace. The Peruvians also maintain that the mother of Incas discovered cotton and taught them how to manufacture it. The first English woman's invention on record is patent No. 87, granted to Sarah Jerom in 1635 for "an engine to cut timber into thin pieces for making bandboxes," and many years elapsed before another patent was granted to a female applicant, viz., No. 182, issued to Rebecca Croxton in 1675 for weaving point lace.

When ex-Senator J. J. Ingalls visited the World's Fair he expressed himself as very much surprised and disappointed that the building devoted to woman's exhibit had so little to show for her boasted achievements. Woman's progress is the theme of the hour; much is claimed by her in every department of life, and an endless controversy seems to have been aroused to meet those claims; but a visit to the United States Patent Office will give a definite and incontrovertible information concerning the advance made in industrial arts by female inventors, for ever since this great institution had a history a faithful record has been kept of all manner of contrivances to ease labor or add to the comfort and convenience of humanity that have been discovered both in this country and abroad. From this authentic record it appears that the first invention ever made by a woman in the United States was a method of weaving silk with straw, devised by Mary Kies in 1809, and that six years had passed before a second Mary (bearing the surname Brush) produced a corset, in 1815. Four years later Sophia Usher claimed the honor of making a new carbonated liquid cream of tartar, and, after another quaternion interval, Julia Planton broke the silence by asserting her invention of a foot for a stove. These were the pioneers among feminine claimants in the realm of invention. Following them through the first three decades which exhibit their new talent woman produced twelve other more or less useful novelties, viz.: a method of weaving grass for hats, a method of accelerating spinning-wheel heads, a mode of manufacturing moccasins, a sheet-iron shovel, a method of whitening leg-horn straw, a globe for teaching geography, a cook stove, a bellows, a balsam lavender, a calash balloon for ladies, a method of cutting straw and fodder, and a mode of manufacturing external fibers of asclepias scyriacca. These first intimations of inventive genius are prophetic of her future career under its guidance. The earliest American patent taken out by a woman was for shedding (a way of dividing the warp threads in a loom to allow the passage of the shuttle), by Eliza B. Judkins, in 1834, and was numbered 1075, the office having reached that figure in its register of patents granted to men. Eve was late in plucking fruit

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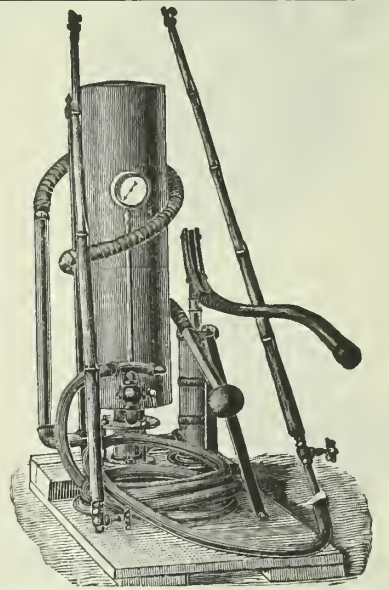
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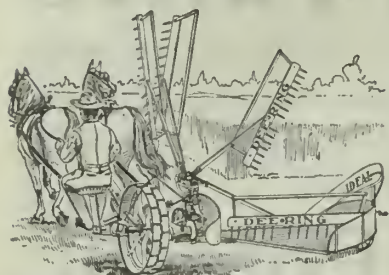
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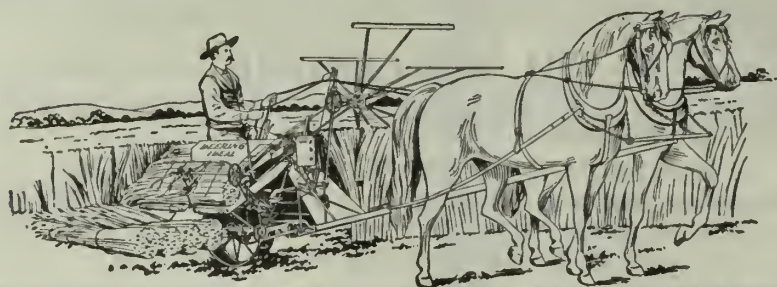
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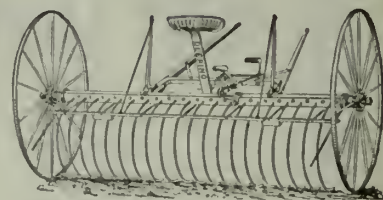
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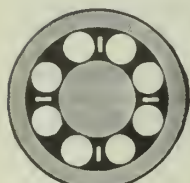
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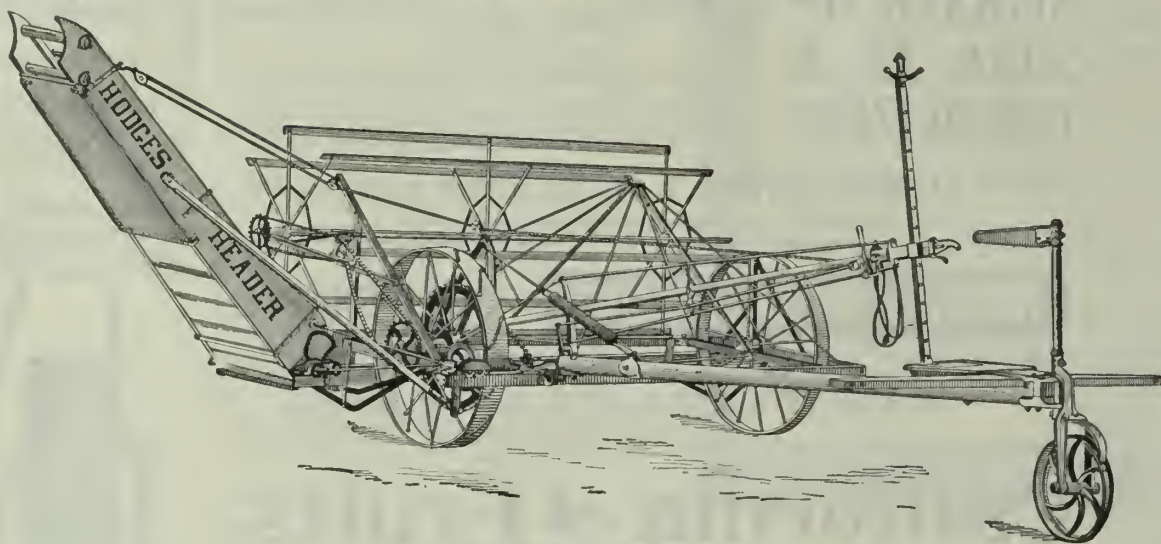
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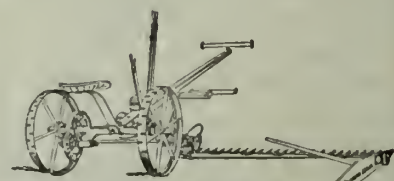
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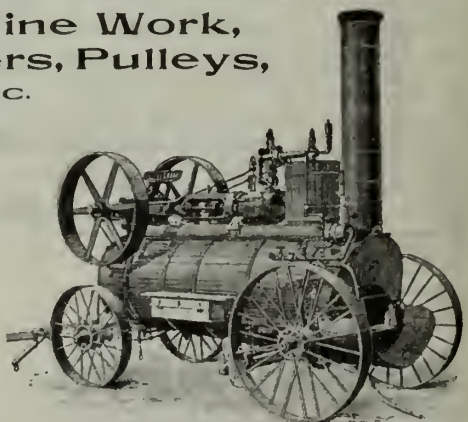
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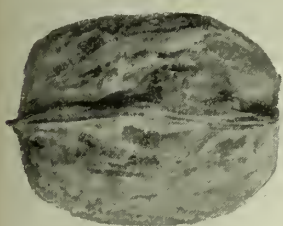
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Vol. LIX. No. 16.

SAN FRANCISCO, SATURDAY, APRIL 21, 1900.

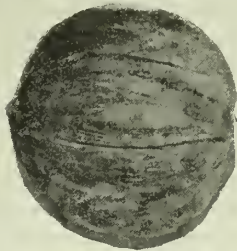
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Chaberte.



California Black.



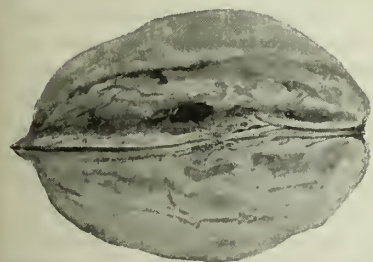
American Black.



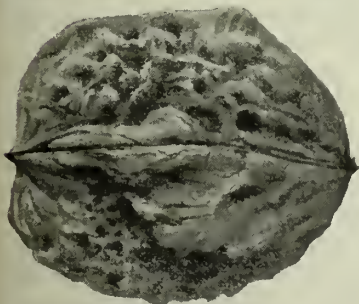
Common English.



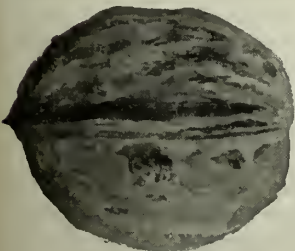
Grenoble.



Franquette.



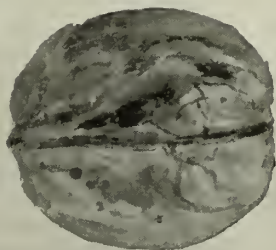
Gant or Bijou.



Serotina.



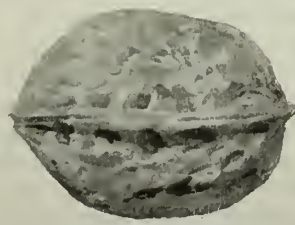
Mayette.



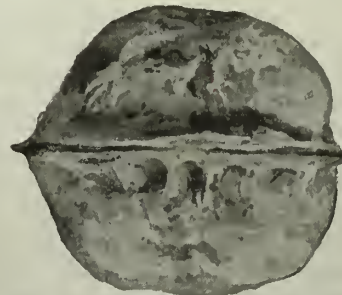
Mobart.



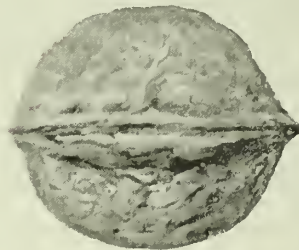
Fertile.



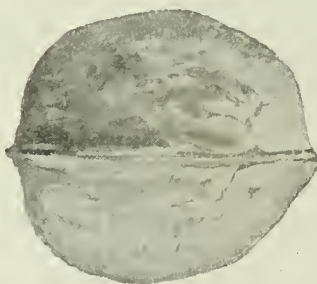
California Papershell.



Rivera Hardshell.



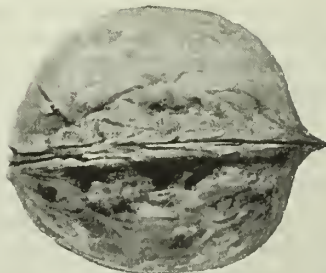
Rivera Softshell.



Ford's Eureka.



Improved Softshell.



Ford's Softshell.



Fruiting Branch of Walnut—(Reduced).

Varieties of the English Walnut.

So many readers desire to recognize the varieties of English walnuts which are now quite widely distributed over the State that we adorn this page with a pictorial exposition of the subject, which is more

intelligible than pages of description would be. The forms of the black walnut are merely introduced for a contrast. Many of the varietal names have been made familiar to our readers by the excellent writings of Felix Gillet which have been published in the PACIFIC RURAL PRESS. For the collection of walnut

portraits we are indebted to the careful and painstaking work of B. M. Lelong, secretary of the State Board of Horticulture, who secured them to illustrate his report on this nut, to which we have previously alluded. The varieties which constitute the bulk of the southern California crop are shown on the right.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, April 21, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Fruiting Branch of Walnut—Præparturiens, Chaberte, California Black, American Black, Common English, Rivera Softshell, Ford's Eureka, Improved Softshell, Ford's Softshell, Rivera Hardshell, California Papershell, Fertile, Mobart, Mayette, Serotina, Gant or Bijou, Franquette, Grenoble, 241.
EDITORIAL.—Varieties of the English Walnut, 241. The Week; The Sorghums in California, 242.
QUERIES AND REPLIES.—Fig Growing; Orange Budding and Grafting; Alfa fa Sowing; Horn Fly Fighting; Treatment of Frosted Vines; Generations of Borers; Hens in Confinement, 243.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending April 16, 1900, 243.
STATE BOARD OF AGRICULTURE.—California Agriculture in 1899, 244.
HORTICULTURE.—The Olive not Profitable, 244. Large Scale Grafting in California, 245.
FLORIST AND GARDENER.—Aquatic Plants and Water Gardening in California, 245. Cucumber Growing and Pickle Making, 246.
THE VINEYARD.—The California Wine Product, 246.
AGRICULTURAL REVIEW.—247.
THE HOME CIRCLE.—Love and Labor; At the Waking of the Year; The Smith Girl's Slight; The Country Girl; Bed Time Story; Choctaw Courting, 248. Emma Calve's Mistake; Opportunity; "Cordially Yours," April, 249.
DOMESTIC ECONOMY.—Cooking Dried Fruit; Orange Wine; Domestic Hints, 249.
THE MARKETS.—Produce Market; Fruit Markets, 250-251.
PATRONS OF HUSBANDRY.—Grange Picnic, 254.
THE VETERINARIAN.—Answers by Dr. Creely—For a Gunshot Wound, 255.
MISCELLANEOUS.—The Golden Age of Science; Origin of the Telephone; The Chinese and the Telephone; Miscellaneous, 252. List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents; Asphalt Paper Pipe, 253. Canker Worms at Calistoga, 254. Government Crop Report; Cyclopaedia of American Horticulture, 255.

The Week.

Showers have reached considerable areas of the State again since our last issue and have brightened the outlook for field crops. A few more showers will bring out a fine aggregate of productions in all the central and northern parts of the State. The fruit crop will be somewhat reduced by frosts, and some localities have lost heavily.

The most urgent issue now pending is filling the required percentage of the prune product to enable the California Cured Fruit Association to proceed. President Bond has issued an address to prune growers stating that something over 75% is under contract, but that this is not enough to enable the association to maintain prices. Ten per cent more of the acreage is required, and this must be signed up by May 1. An earnest appeal is made to growers who have not signed to do so and enable the undertaking to proceed on a commanding basis. It would certainly seem as though we ought to stop talking of the importance of co-operation if enough practical co-operators cannot be secured to give a fair trial to the principles which promise so much for the fruit interest.

Wheat holds up better in Liverpool than it does in the Eastern centers and quotations for shipping wheat here do not change. There is little doing, however, even though more ships are available and freights a little easier. Barley is unchanged and quiet. Corn is lower for white and higher for large yellow, both California and Eastern grown. The only hay which is called for is choice wheat, but prices are not changed. Bran is unchanged, rolled barley is lower and cracked corn higher. Beef and mutton are stationary; lamb is lower and veal higher. Hogs are also higher and packing has stopped. The retail trade is taking supplies as they arrive. Poultry is firm; young fowls are in good shape and turkeys scarce. Butter is fairly steady; packing disposes of the surplus. Cheese is low. Eggs are easier for ranch, as common and stored eggs are going in their place while the weather remains cool. Eastern eggs are firm and cost about as much as the local product. Cherries, blackberries and raspberries are coming in and selling at fancy rates; strawberries are more abundant. Oranges are too freely received and are weaker. Lemons and limes are quiet. Prunes are being taken for Germany; other dried fruit is

quiet and weak. Old potatoes are stronger and onions are still almost at famine prices. Peas are being taken by canners. Dry beans are steady and well held. A small Eastern order for wool was filled this week and it is expected that wool buyers will get down to business in a few days.

The Sorghums in California.

We can hardly render better service just at this time to our readers who have recently come to the State, or to older readers who have overlooked our earlier preachments on the subject, than to call attention prominently to the value of sorghums in the warmer, drier portions of the State. These plants have demonstrated each year more widely their importance as a succulent food during the dry season, and the area given to them has constantly increased, but we still find lack of knowledge concerning them as we visit different parts of the State.

By the term "sorghums" we signify all the plants of the genus which are commonly seen in California except Johnson grass, which is the black sheep of the flock and should be resolutely destroyed as worse than worthless. Kafir corn, Jerusalem corn, millo-maize, Egyptian corn, etc., belong to the group of non-saccharine sorghums; the Early Amber, Early Orange, etc., are included in the group of saccharine sorghums because they have a sugar percentage which would constitute them a source of sugar and syrup were there not better plants for this purpose. Both groups have forage value and are included in the present reference to the plants. Their values for California—in the hotter, drier parts especially—include the following:

They grow vigorously with an amount of soil moisture which would not give good growth to Indian corn, and they keep a good, broad, juicy leaf under heat and dry air which would curl up and destroy Indian corn. For these reasons one sees large sorghum fields in localities where Indian corn growing has been largely abandoned.

They can be planted late in the season when, because of heat and drouth, it would be impossible to get a good stand of other plants. They will endure cutting or feeding off in the midst of the dry season, and will quickly make second or third growths with very limited soil moisture and will keep growing until the frost comes. They will endure early cutting, and subsequently make a good seed crop if even moderate moisture remains within reach.

Thus the plants yield green feed during the dry season for all kinds of live stock, including poultry, and will produce a seed crop comparable with barley or corn for stock and poultry feeding.

The fact that all this can be done in the presence of the highest interior heat with less moisture than other forage and grain plants sufficiently accounts for the growing popularity of the sorghums in California.

Though California is demonstrating these points to her own profit, there is much work being done in the same direction also by Kansas and Nebraska and other interior arid regions where heat and drouth resisting plants are a desideratum. The Nebraska Experiment Station has just published a bulletin on the feeding value of sorghum which makes points suggestive wherever the plant is grown.

Chemical analyses show that the feeding value of sorghum is greatest when the plant is young. When 2 feet high it contains three times as much nitrogenous matter, twice as much fats, and only two-thirds as much fiber or woody material as it does when it has attained its growth and formed seeds. Young sorghum is an almost perfect stock food, since it contains flesh-forming materials and fat-forming materials in the ratio of 1 to 7. When nearly mature this ratio is 1 to 23, the fat-forming materials being very excessive. Therefore, the crop should be used for pasturage at least before the seeds form. It would be profitable to begin to pasture the sorghum when it is not more than 2 feet high, since the stalks first eaten off will usually produce a second growth of young cane, which will balance the increasing fat-forming properties of the other crop. Young sorghum is a very succulent food. It contains about 85% of water, or only 15% of dry matter. Over 150 pounds per day of the green fodder would be required to furnish sufficient food for growing cattle or milch cows of 1000 pounds weight. Therefore, the

best results are obtained by using some dry feed along with sorghum pasturage, and, as the young sorghum is a little scant in protein, alfalfa hay, which is very rich in that substance, would balance the ration and free the animal from the effort to work up such a large weight of green stuff. Green alfalfa and grain straw is a good combination, and so are alfalfa hay and green sorghum.

We do not do as much with sorghum hay in California as we should. The plant is more generally used in this way in the central States mentioned, and the Nebraska work shows that sorghum should be cut for fodder at as early a stage as it can be well cured. Analyses show that after the period of flowering the sorghum stalk rapidly becomes more fibrous or woody, and the proportion of the more valuable food principles is correspondingly decreased. Sorghum fodder does not possess any great feeding value. Even if cut while heading out, it will have a somewhat smaller amount of flesh-forming material than most hay crops, and less than corn fodder, but more than straw of the small grains. The fondness live stock have for this fodder is doubtless due to the sugars (probably chiefly glucose) which it contains. Its relatively high percentage of wheat and energy-producing materials makes it especially adaptable for cold-weather feeding.

In growing sorghum the seed may be sown as early as can be done without bringing the young plant into contact with a spring frost, but growth will not be rapid until heat is adequate. From this early start the seed may be sown at later intervals so long as moisture remains for its germination and growth of some account can be made before fall frosts begin. The usual practice is to sow at intervals from April to August, according to the local climate, and in frost-free regions even later fall sowing may be worth while if forage and not grain is the end in view. Some interesting experiments have just been reported by the Oklahoma station which give light on the matter of distances in sowing for grain yield. The largest yield of grain, fifty-one bushels per acre (at fifty-six pounds per bushel) was obtained where the rows were 3½ feet apart, and the stalks averaging 2½ inches apart in the row.

Distances varying considerably above and below this distance gave good results, but when the stalks were 10 to 18 inches apart in the row very low yields were obtained. Having the rows close together did not bring up the yield. Where the stalks were 10 to 18 inches apart they were short and coarse. The heads were good size, but not enough larger to make up for the deficiency in number. The very thin planting headed and ripened later than the thick planting, and as a rule the heads did not clear the sheath entirely, which was not the case with the thick planting. Previous experiments at the Oklahoma station agree with these results very well and go to show that Kafir corn should be planted much thicker than Indian corn, and for the best yields of grain the rows should be as close as can be cultivated conveniently—about 3 feet apart—and the stalks should be from 3 to 5 inches apart in the row. When sorghum is grown for forage a thicker row is desirable, but to retain moisture and get several cuttings distance favoring cultivation must be had between the rows in most soils.

We must remind readers that second growth of sorghum fed green is dangerous to stock, and large losses have occurred without demonstration of the cause. Partial drying before feeding, or feeding in connection with hay, will probably make it safe, but even in this case cattle should not be quickly changed from dry feed to green sorghum.

PROF. HILGARD of the State University has just issued a new bulletin on alkali soils and what can be done with them, including the results of the latest work of the University Experiment Stations with this important matter, and all interested can get copies on application to Prof. Hilgard at Berkeley. The U. S. Department of Agriculture is also taking a hand at alkali studies in this State, and Prof. Means of that department is now in Fresno for that purpose, having already been engaged in the same line in southern California.

In consequence of poor crops wheat prices in Chile are advancing and the situation will allow large importation from California.

QUERIES AND REPLIES.

Fig Growing.

TO THE EDITOR:—Will you kindly give information as to culture of figs in your State—the culture, soil, varieties, best part of State and locations as to soil, etc., for them? Can trees be had of the nurseries?—A. BIRD, St. Joseph, Mo.

This question was partly covered in this column recently. It is impossible to cover the whole subject of fig growing. It has filled many columns of the PACIFIC RURAL PRESS in the past, and a condensed statement of the experience of Californians for the last thirty years in cultural methods is given in the fig chapter in "California Fruits." It must be acknowledged that though a few fig growers have secured satisfactory results, the greater part of the planting has proved unprofitable, and many acres have been grubbed out. In 1898 there was a serious shortage of the Smyrna product, and the prices of dried Adriatics in California went high. Since then the price of the California fig has fallen back to a low level. It is a fact that California has not yet produced a dried fig to replace the Smyrna fig, and the only present prospect of doing it seems to lie in growing the Smyrna variety with the help of the insect which accomplishes caprification in Smyrna. As stated last week, this insect is now here and seems inclined to stay, and, if it does so, the opportunity opens to profitably grow a considerable area of figs for drying in parts of the State best adapted to give a thin-skinned fig, rich in sugar, and to facilitate open air drying of it in good condition. These locations were indicated last week. California nurserymen can furnish considerable quantities of fig trees for planting next fall. As there may be a rush on the true Smyrna drying fig, intending planters should place contracts with the nurserymen early.

Orange Budding and Grafting.

TO THE EDITOR:—When is the best time to bud Navel oranges upon Seedlings? The orchard has not been irrigated this year and the ground is rather high and dry.—READER, Prospect Park.

In the budding of orange trees it is desirable that the buds should be inserted at about the time when new growth is appearing. It must be done when the sap is flowing, in order that the bark will lift easily. There are several periods of activity in the orange in the course of a year, and budding in advance of either of these will be satisfactory, so far as growth is concerned; but, in order to get a long growing season free from frost, budding is generally done at this season of the year—say, during the months of April and May.

As to the trees not being irrigated and the ground rather dry, you will have to observe for yourself what effect that has upon the growth of the tree, because, as suggested before, when the bark is tight it is almost impossible to make a satisfactory bud. Grafting could probably be done, if budding could act at this time, for, though the trees would suffer from drouth, cutting back the top would relieve the drain of moisture, and would turn such supplies as might be available to the growth of the graft. Our observation is that conditions of partial growth which might be rather severe upon the tree are not unfavorable for the growth of grafts when considerable part of the top is removed. Of course, the future of the tree will depend upon how long this dry condition prevails.

Alfalfa Sowing.

TO THE EDITOR:—Please inform me through the columns of your paper the proper way to prepare the ground for alfalfa. What is the proper way to cover after sowing—with a harrow or clod masher?—A SUBSCRIBER, Winters.

Plow as deeply as you can afford to, remembering that you have to deal with a deep-rooting plant, whose thrift and quick establishment depend upon striking the lower strata as rapidly and easily as possible. After plowing, harrow thoroughly with teeth of good length and sharpness to settle the land into place and not leave cavities below. Then sow the seed evenly and cover with a brush drag very lightly. If the soil is light and the season as late as it now is, a light roller will bring moisture to the surface to sprout the seed. If a shower should follow sowing this may not be necessary, and on soils disposed to run together the roller is not a good tool

unless no more rain is expected. Covering with the harrow usually covers the seed too deeply, and a clod masher is apt to rub down the surface too hard. The choice of tools depends directly upon the character of the soil you have to deal with and the condition you find it in at the time. The points to be aimed at are very shallow covering and just compacting enough at the surface to insure moisture enough to start the seed well.

Horn Fly Fighting.

TO THE EDITOR:—I was disappointed to see in the PACIFIC RURAL PRESS that all horn fly traps proved a failure in the experiments at the Kansas station. May I describe what seems to me would work as a fly trap? Use a close, dark room and after the cattle are in and the door shut there should be no light except a skylight screen, which would be the trap. I believe they had all this, but in all my thoughts of a trap I never thought of one without some means to drive them from the cattle, for darkness does not do that. I once went with some cars of cattle, starting one afternoon. I was surprised next morning to see the flies still on the cattle. If it has not been tried, it seems to me a good spraying with an emulsion of crude petroleum would either kill the flies or drive them to the skylight. Possibly clear water might do it; if not, the spraying would prepare the cattle for keeping the flies off the next few days at any rate. Surely some way will be found, if the experiments are continued, to deliver the poor cattle from this cruel pest. I believe their greedy, cruel nature not to leave the animal can be taken advantage of to work their destruction. Did you ever drive a cloud of them from a cow and see them always go about so far—2 or 3 feet—and come back with a jerk, like a ball with a rubber attached?—H. E. DYE, Tulare.

We believe the Kansas experimenters used a contrivance to dislodge the flies as they went into a dark room, but the thing did not work as expected, and they take recourse to applications as stated in our issue of April 14, as mentioned by our correspondent. Relief from the horn fly is a thing most earnestly to be desired, and we give prominent place to Mr. Dye's suggestion to draw the attention of all who had to deal with this pest. It has been in California about three years and it should be seriously fought. We shall be glad to hear of any way in which our readers have succeeded in saving their cattle from this enemy. It will be a public service as well as a humane act to help all stockmen with successful measures against it.

Treatment of Frosted Vines.

TO THE EDITOR:—Should frozen shoots of grape vines be left alone, pinned back to two eyes, or broken off to the old wood?—READER, Sacramento Co.

Frozen shoots should be removed as soon as it is seen how far the injury is done. It is clearly demonstrated by ample experience that it is ill for the vine to leave this bad wood on the vine. The best treatment is generally a sharp downward jerk which clearly removes the shoot. It has been shown by comparative test that vines thus treated started out dormant buds freely and bore part of a crop, while vines left with the injured wood on did not develop dormant buds so well and made weaker growth, which bore little fruit.

Generations of Borers.

TO THE EDITOR:—If the parent borer be prevented, absolutely, from laying more eggs on a tree already infested, will the tree become free from the pests through the voluntary action of the worms in crawling out and metamorphosing? If so, how soon?—J. M. H., Edenvale.

Yes; when the larvæ are full grown they will pupate and the perfect insects will reach the open air for mating. If then no more eggs are laid on the tree, the tree will become free from borers. The length of time depends upon which borer you have. The common flat-headed borer, the crown borer, the peach twig borer, and, in fact, most common borers, mature within a year, but some beetle larvæ which rarely are encountered in fruit trees live two years or more in the wood.

Hens in Confinement.

TO THE EDITOR:—Would it pay to keep a large number of hens, just for the eggs, if they have to be kept in pens or inclosures? If so, how large an inclosure would it require for 100 hens?—READER, Tulare Co.

Our experience is that it can be made to pay, providing the very best work is done in food selection

and unyielding effort made for hygienic conditions, including absolute cleanliness, repression of vermin and immediate isolation of all ailing birds. We have successfully kept forty hens for several years at a time in a space about 30 feet square, including roosting and nesting places. But though we know this can be done, we would not embark upon commercial poultry keeping on that basis. We do not believe the best results can be realized without the advantage of ample range and home-growing of grains and green-stuff, and this requires ample room and adequate water supply.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 16, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

COAST AND BAY SECTIONS.

The temperature has been nearly normal and rain has fallen during the week in nearly all sections, portions of Sonoma county reporting 1.50 inches on the 11th and 12th, while other localities received only light showers. Grain and pasturage were greatly benefited. Except in some portions of the southern coast counties grain continues in excellent condition, with increasing prospects for a heavy yield, but in a few localities wheat is badly in need of rain.

Many conflicting reports have been received concerning the heavy frosts of last Monday and Tuesday, some reports stating that apricots, cherries, prunes and nearly all deciduous fruits were killed, with serious damage to grapes and even to barley, potatoes and corn, while other reports say the damage was not as serious as at first estimated. Ice formed in the Santa Clara valley and in portions of San Luis Obispo county, and no doubt considerable damage has been done to fruit in exposed places.

SACRAMENTO VALLEY.

The weather has been favorable for all crops, with nearly normal temperatures and light showers. Grain continues thrifty and in some localities is heading out; if not injured by the north winds, the wheat and barley crops will be unusually heavy. Haying will begin soon; it is said the yield will be lighter than estimated. Green feed is abundant.

Some sections report considerable damage to deciduous fruits by frosts on the 8th and 9th, but not as serious as at first estimated, and other localities appear to have escaped injury altogether; grape vines in low, exposed places were undoubtedly injured, and late reports may show more serious damage to tree fruits. The reports received for this Bulletin continue favorable for a large yield of all deciduous fruit. Almonds have been seriously thinned out by dropping and a light crop is predicted.

SAN JOAQUIN COUNTY.

Generally cloudy and cool weather prevailed during the week. The light showers which fell during the fore part of the week did not do as much good as was anticipated, owing to their being followed by drying northwest winds. The early sown grain promises a good crop, but the late sown is badly in need of rain, and in many places will only make hay or feed. Haying is in progress in most sections, with outlook for good crop. The first crop of alfalfa hay is about ready to cut in the southern portion of the valley. Frosts occurred quite generally on the 8th and 9th, doing considerable damage in some localities, vineyards and gardens suffering most. The damage seems to be confined to scattered small localities. Tree fruit was damaged but little if any. Reports from all sections are favorable to the fruit crop.

SOUTHERN CALIFORNIA.

Nearly normal temperatures have prevailed, and no damaging frosts have occurred. The only precipitation reported was a trace at San Diego. The light rain of the preceding week was beneficial to hay in some sections, but wheat prospects are less encouraging than at this time last week, owing to the prevalence of drying winds. It is believed the wheat crop is a complete failure. New hay is of good quality, but the crop is light. Pasturage is fairly good, though needing rain.

Apricots were considerably injured by frosts during the preceding week in the vicinity of Santa Maria, and it is now reported that the yield will be very light throughout the section. Peaches are looking well, but this crop will also be light. Citrus fruits are making favorable progress.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, April 18, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Minimum Temperature for the Week.....	Maximum Temperature for the Week.....
Eureka.....	.14	47.38	31.55	40.16	44	64
Red Bluff.....	.02	20.53	19.37	24.44	40	61
San Francisco.....	.40	16.40	13.91	18.68	42	80
San Francisco.....	.21	17.89	15.38	21.31	48	70
Fresno.....	.7	7.35	6.78	8.25	42	88
Independence.....	.00	2.78	1.16	4.46	38	78
San Luis Obispo.....	.16	15.26	14.77	16.28	34	80
Los Angeles.....	.00	5.68	4.79	16.50	42	78
San Diego.....	.7	3.38	4.58	9.14	50	68
Yuma.....	.00	0.79	1.34	2.84	46	90

STATE BOARD OF AGRICULTURE.

California Agriculture in 1899.

NUMBER VII.

Report of the State Board of Agriculture, specially furnished for advanced publication in the PACIFIC RURAL PRESS.

DAIRYING.

Dairying is one of our great resources which has been much neglected and is at present largely undeveloped. We have always imported the larger portion of our dairy products and are still doing so. This is incomprehensible when we consider the almost ideal conditions which prevail in this State. Our natural grasses are rich and nutritious; our alfalfa, which grows abundantly in all parts of the State, is one of the richest dairy foods in the world. We have abundance of corn for silage, sugar beet pulp, mangles and other roots, and in our cheap wheat and barley a grain ration which equals the best. Add to all this our even and temperate climate, where stock can be reared to perfection and cows enjoy uninterrupted comfort in the open air, and the reason for our lack of dairy development is hard to discover. The solution, which lies on the surface, is that our earlier farmers were operators on a very large scale in special directions—large wheat fields, great hop yards, or extensive orchards first occupied them, and they have left dairying to result from the mixed and more intensified farming which follows a denser population and smaller holdings.

The introduction of the creamery is developing this industry, inducing farmers to increase the number of their cattle and greatly improve their quality. At creameries milk is weighed and paid for in proportion to its richness. The farmer is thus given a check upon his herd, and if the quality is insufficient or the percentage of fat low, as compared with his neighbors, he sees his direct loss and is in a position to correct it. The average California dairy cow is far from being as good as she should be. There is a very small number of pure breeds of the dairy breeds in our dairies, and the number of properly graded cows constitute an inconsiderable proportion of those used for dairy purposes. Native cattle, or grades of some of the best beef breeds, constitute the bulk of our herds. The result is seen in our small product, and can be seen more clearly from an examination of the records of our State Dairy Bureau. These records show that the yearly butter product of many of our dairies does not average over 75 pounds of butter per cow, a large number average less than 100 pounds, while the majority average under 150 pounds. These low products are not creditable to our dairymen and are certainly unprofitable. There is no excuse for such yields in California. Our dairy herds should be pure bred and of some recognized dairy breed, where the circumstances of the dairyman will permit. They should at least in all cases be graded, and every herd should have at its head a pure bred sire of good dairy ancestry, and his daughters from the best cows in the herd should be saved to increase or recruit the dairy. If the dairies reporting the above discreditable and wasteful yields would test their cows by the Babcock tester, and discard the inferior cows, the average yield would be greatly increased and their slavish and losing business at once placed on a profitable basis. If they would introduce a pure bred sire into their herd, the first generation of his produce would double the yield of their dams. Thought and intelligence, combined with our climate and grasses, would result in a dairy product which would astonish the world.

We are pleased to report the splendid work of three dairies, operated under widely different conditions, with different breeds of cattle, but all showing what intelligence and the practise of progressive methods can accomplish here. These are practical, working dairies, not fancy herds maintained under expensive conditions.

The first is the Minnewawa herd, owned by Mrs. M. E. Sherman, at Fresno, which at present consists of about 150 cows in milk, chiefly Holsteins, pure and high grade. It averaged during the last year 339 pounds of butter per cow, many of the cows in the herd producing more in a month than some of the cows in the dairies above mentioned did in a year. It will be recalled that this herd is owned in the warm, dry San Joaquin valley, and made its yield under the conditions which prevail there.

The second report is of a herd of native and mixed blood, largely graded from milking Shorthorns with a Jersey infusion. This herd is owned by G. F. Cornish of Clarksburg, on the Sacramento river bottoms, and is fed almost exclusively on alfalfa without a grain ration and maintained under the simplest conditions. Twenty-four cows and heifers produced in actual butter, paid for at the creameries, an average of 225 pounds per cow for the year 1899. This very good yield is the result purely of careful individual selection of cows, without regard to breed, and the use of bulls from cows which were large butter producers, no matter of what breeding. Good as is this herd, we believe it might be improved by the use of pure-bred bulls of such approved dairy breed as Mr. Cornish might prefer.

The third report is a sensational one. Charles

Decarli of Waddington, Humboldt county, has a herd of fifty-five Shorthorns and Jersey grade cows which produced in 1899 an average yield of 339 pounds of butter each. In 1890 this herd yielded the phenomenal average of 411 pounds, but so many heifers had to be introduced to replace the loss of many of his best cows through milk fever that his yield for 1899 has fallen off. This splendid average has been secured by Mr. Decarli without feeding any grain, and while ranging fifty-five cows on sixty acres of land. He has used pure-bred Jersey sires for the last six years, and urges the use of pure-bred sires as the means of attaining the greatest improvement.

These communications should be read by every dairyman in the State, and, if their lessons are learned, the mortgages on our dairy farms will soon be paid, and we will cease to import dairy products. An export market for butter in the Orient is developing, which we should be prepared to supply. The value of our dairy product for 1899 has fallen off, as a result of the drought of 1898, but the quality is undeniably improving, largely as a consequence of the extension of the creamery system.

The following tables, furnished by the State Dairy Bureau, gives the value of our dairy products for the last three years, ending Oct. 1, 1899:

1897.	
Value of 28,678,439 pounds of butter.....	\$5,573,617
Value of 6,339,625 pounds of cheese.....	569,563
Value of milk and cream consumed.....	4,669,480
Value of calves from dairy cows.....	723,370
Value of hogs produced at creameries and dairies.....	915,330

Total value for 1897.....\$12,451,363

1898.	
Value of 23,691,321 pounds of butter.....	\$4,354,238
Value of 5,148,372 pounds of cheese.....	535,430
Value of milk and cream consumed.....	4,712,280
Value of calves from dairy cows.....	562,630
Value of hogs produced at creameries and dairies.....	748,895

Total value for 1898.....\$10,913,473

1899.	
Value of 12,134,964 pounds of dairy butter....	\$2,453,690
Value of 12,725,744 pounds of creamery butter.....	2,916,748
Value of 5,294,938 pounds of cheese.....	588,982
Value of milk and cream produced for consumption.....	5,047,353
Value of calves produced from dairy cows....	934,159
Value of hogs raised from by-products of dairies.....	889,865

Total value for 1899.....\$12,830,797

POULTRY.

This business has been much neglected in California and affords opportunity for large and small investment and certain and steady employment and reward for labor and intelligence. Our temperate climate, well drained soil, and suitable and cheap feeds, combine to recommend this business especially to the thrifty and industrious persons of small means. Our ever present alfalfa is one of the healthiest and best poultry foods known. Our wheat, which grows everywhere and frequently sells at a very small margin of profit, could not be better used than by being fed to poultry. The prices for poultry products paid in our markets are always good and frequently high. In face of these conditions we import from the East each year about \$3,000,000 worth of poultry and eggs. We hope soon to see this business developed to meet our domestic requirements.

SHEEP AND WOOL.

The number of sheep and the quantity of wool produced has fallen off about 50% since 1876, which was the year of our greatest production. Owing to the appropriation of our ranges for other purposes and the low prices which have latterly prevailed, the decline had been steady. Sheep have been kept in California under primitive conditions; large flocks on wide ranges. With the adoption of smaller flocks on numerous farms, and stimulated by the high prices now prevailing, the number of sheep kept should largely increase.

The following tables give the wool clip since 1876, and the number of sheep since 1895:

ANNUAL WOOL CLIP.	
Year.	Pounds.
1876.....	56,550,970
1877.....	53,110,742
1878.....	40,362,060
1879.....	46,903,360
1880.....	46,074,154
1881.....	42,204,769
1882.....	32,448,349
1883.....	40,484,690
1884.....	37,415,330
1885.....	36,561,390
1886.....	38,509,160
1887.....	31,564,231
1888.....	32,567,972
1889.....	34,008,770
1890.....	34,917,320
1891.....	33,183,475
1892.....	35,802,930
1893.....	33,169,375
1894.....	36,968,400
1895.....	35,856,690
1896.....	27,195,550

1897.....	32,534,230
1898.....	28,063,240
1899 (estimated).....	29,750,000

NUMBER OF SHEEP.

1895.....	3,526,341
1896.....	2,962,126
1897.....	2,589,935
1898.....	2,175,545

ANGORA GOATS.

Angora goats in common with other animals thrive and produce well, although but few are kept or bred here. The breeding of these animals has recently become more profitable and there is now a steady demand at profitable prices for their fleeces. The world's total output of Angora wool is about 22,000,000 pounds, of which about 2,000,000 is produced in the United States. Of this, California does not produce a large amount, ranking after Texas, Oregon and New Mexico. The rearing of these hardy animals in many sections of the State where suitable cheap ranges can be had should prove most profitable.

(TO BE CONTINUED.)

HORTICULTURE.

The Olive Not Profitable.

By GEORGE J. MITCHELL at the Claremont Farmers' Club.

The olive in this State has been cursed by the unusual amount of misrepresentation which has been indulged in about it. No other fruit that I know of can compare to it in this regard. The press, mainly through ignorance, for a long time allowed itself to be used as a tool by these olive prevaricators. Of late I notice a change, and respectable newspapers are shy about indorsing a lot of bosh about the olive sent in by scheming nurserymen or land sharks.

The olive prevaricator is a distinct species. Generally he is a grower and vendor of olives. Pomona has produced several of the species who have risen to prominence in their profession. One in particular became the King of the Guild. This man, with little or no practical knowledge of the olive, crammed a lot of historical stuff of little value, and then in the interest of his nursery set out to instruct the people of California as to the merits of the olive, and especially as to the large profits obtained from an orchard of the same. He wrote papers for all the clubs, and had them published in all the papers of southern California. With the exception that he was careful to get the correct names of his varieties, there was scarcely a true word in any of his papers.

John Packard, a practical grower and something of a wag, by the way, concluded to go into the business of putting up table olives. Before his olives were ready for market Mr. Packard got out a schedule or price list of what he was willing to take for his olives. This he had printed. I looked upon it as a joke, for the figures were 50% too high. At all events, Mr. Packard's crop never brought him even 50% of that list. The designing and unsuccessful nurseryman referred to thereupon wrote a strong paper on the profits to be derived from olive culture, and this price list was introduced in full with the strongest kind of indorsement, saying that it was absolutely reliable, and that the prices therein contained were standard and not at all high. This man, with some others who ran him a close second in his nefarious business, induced by their plausible representations, false in almost every particular, hundreds—many of them women—to go into the business of olive growing, practically all of whom have failed to realize one single promise made them. These men, in my opinion, deserved the punishment provided for swindlers. For swindlers they were, and nothing else. [We doubt this: we believe they were over-enthusiastic and should not have written as they did, but we always counted them honest in their zeal.—Ed.]

THE MISSION OLIVE.—There is only one variety of olive that I am thoroughly acquainted with, and that is the Mission. I called up one of the nursery sharps alluded to and said to him: "You have been selling a friend of mine some 'Improved Mission' trees at a fancy price; now you know there is no such thing as an improved Mission." He replied: "Yes, I do know it, but the public must have novelty, and the Mission is one of our best olives." The same man induced a woman friend of mine (he had the improved Mission) to plant a large acreage to olives. He assured her that she could depend upon a bottle of oil to the tree, at \$2 per bottle, in the third year after planting. I told her the thing was preposterous, and did all I could to save her, but she believed him and went ahead. She put in several hundred dollars, seven or eight, her all, and lost every cent of it; nor have the olives ever paid the taxes on that place, though seven years old. And the lady is working hard for her daily bread. There is an array of such cases.

I have said that I was well acquainted only with the Mission, but I will add that from diligent inquiry and investigation I am convinced that it stands among the best. As an all-round olive, for both

pickles and oil of high grade, the Mission is the best we have. Pohndorf has identified the Mission as one of the very best olives of central Spain. We may rest assured the old Mission padres knew all about olives and olive oil. The Mission is a shy bearer, but the very best of the newly introduced varieties are similarly afflicted. I am convinced that the bearing of all these olives can be improved by proper cross-pollination. The Mission is fertilized by the Rubra. Whether it is worth while to try to make them bear better I much doubt. The trouble is not so much in getting the crop as in disposing of it after you have got it. I know this statement will raise a storm of protest from the aforementioned olive prevaricators, but it is the truth as follows: There is no good market for the products of the olive as yet in the United States.

COSTLY EXPERIENCE.—The writer has been growing olives for fifteen years, and it has cost him up to date some \$5000. He has learned the best methods of making oil and preparing the ripe olive in brine. Any one with a little care can make good olive oil. A small cider press is the best of presses. The very best oil, remember, is not economical or profitable, but it takes an effort to make a good pickled olive.

PICKLES.—The ripe olive is more difficult to pickle than one less mature. The ripe pickled olive has its season. I should say it is good in bulk for from six to eight months, and sealed up in glass for a year, but after that it loses its flavor and deteriorates. This fact militates against over-ripe olives with the grocery trade. The trade is used to the unripe, woody, Spanish olive, which is never good and will keep forever. I will say in passing, that the Spanish put these olives—called "Queen" olives—up for export, and will not eat them themselves. This comparing our ripe olive in its keeping qualities with the "Queen" is altogether unfair, but it is constantly done, to the detriment of the former. We hear much of the prices paid for olives for pickling. One hundred dollars a ton is quoted, but I never met a man who had received it. Fifty or sixty dollars is a fair price hereabouts, and this means delivered. It costs about 1½ cents a pound to pick and deliver, and this brings the net to \$20 or \$30 per ton, a price not profitable to the grower. A much better result can be obtained if the grower is able to pickle his own olives, provided he can find a ready market. He must be able to put up a first-class article. Not one in ten can do it; probably not one in twenty. As for the ready market we hear so much about, and the demand being greater than the supply, etc., it is quite imaginary. The ripe olive is a very perishable article, and the grocery trade handles it under protest. The local demand is quite good at opening of season, but soon the market fills up with a poor quality of olives. The price in consequence drops, and then, no matter how good your olives may be—and they have worried the life out of you to get them just right—you can sell them but slowly and only in small lots. The Eastern demand for our ripe olives, as a commercial fact, does not exist.

I repeat the olive is most perishable, does not well stand long journeys, and is liable to be spoiled by careless handling. These reasons are sufficient in themselves to account for the absence of any large Eastern demand.

A friend of mine made up his mind to open up the Chicago market. So he had a carload of olives put up in fine shape and shipped to that city. He went himself and took an experienced man with him. He did all that could be done with those olives, scored a failure with a big F, and got off with a loss of \$800. Whether without salicylic acid it will pay to put the olive up in glass and ship in that shape I cannot state, but in bulk it will not pay.

OLIVE OIL.—Now as to oil. Some years ago Ellwood Cooper of Santa Barbara got a Government test of all the so-called olive oil in the New York market. Fifty-four samples were tested. I think I have given the exact number, and not a single sample was pure olive oil. As I remember it the highest grade oil in the lot had 20% cottonseed oil as an adulterant. The expose had some effect, and Mr. Cooper did succeed in introducing his pure oil into the Eastern market. For a time he got high prices for his oil. Others followed, and California olive oil became quite a fad. But the demand did not keep up the price, which to-day is not much over 50% of what it was. Neither were the adulterated foreign oils driven from the market. Not a bit of it. They held their own and prospered, and it is just by reason of this fact that the outlook for the pure oil of California is bad. There is nothing inherently bad about cottonseed oil. It is rather pleasant tasting oil, and is not injurious to health. It is also very cheap. Now, if the great American people prefer a cheap, adulterated olive oil, and it seems that they do, what are you going to do about it?

These are facts, not theories. That is what I have laid before you, and it seems to me that they are sufficient to bid one pause before going into the culture of the gentle olive.

Large Scale Grafting in California.

H. G. Keesling of Edenville, Santa Clara county, gives the Rural New Yorker an account of how contract grafting is done in his district which will be

found interesting in other fruit regions of California.

Grafting has grown into a large business in this country, aside from the work done in nurseries in preparing young trees for the market. While California is producing large quantities of fruit, still the business may be considered to be only begun. The large orchards that have been dug out and reset in a small part, but principally changed by grafting from a variety that for any reason was not desirable, to some more profitable kind, or one better adapted to the locality, shows that the experimental stage is still with us. Large acreages of almonds and apricots have been grafted to prunes, principally, and generally because of failure to bear well, either on account of imperfect pollenization or frost. This state of affairs has called into action a number of men who make a business of doing such work by contract. One of these specialists has just finished grafting a lot of Green and Imperial Gage plums (about 525) to Petite prunes. These plum trees are about ten years old and have borne large crops of plums, but they are no longer in demand at the canneries at a paying price, hence the change. Our contract calls for from twenty-five to thirty-five scions in each tree and the price paid is 35 cents per tree, we furnishing the scions and whitewashing the trunks of the trees to prevent sunburn. This work is warranted in this way: When the scions are set two-thirds of the contract price is paid. After first suckering, 5 cents per tree. On December 10, 1900, remainder due for all trees that have a good top of grafts or buds. If any scions fail to grow then, suckers are left to grow and are budded in August.

WORKING IN GANGS.—These grafters work systematically and rapidly, about seven of them working in a gang. Two saw off the branches and split the stubs ready for the scions, one man cuts scions, two men set them, and two put on the wax. The clefts for the scions are never cut across the center, so as to split the pith. Only two buds are left on a scion, and sometimes only one, when the grafting wood is costly. We had 2 feet of Burbank's Sugar prune grafted and realized twenty scions therefrom. Waxing is done with hot wax and is put on with a brush, completely filling all the crevices about the scion and a dab on tip. This is far preferable to putting on while plastic with the fingers, and much more rapidly done. In three years we expect to get a good crop of prunes from these trees. Sprouting is not done as closely as formerly, as we find that best results follow by letting some of the sprouts grow the first season, and it is always best to leave at least one branch (a sap sucker) to be cut off next winter after the scions are large enough to take all the sap that the stump may furnish.

ATTENTION TO GRAFTS.—The Tree and Vine adds these notes on grafting: Complaints show that young grafts just starting are suffering from red spider and also from cutworms. Dry sulphur seems as good as anything for the red spider. It should be repeatedly applied as the new leaves come out. Cutworms may be killed by the bran-arsenic mixture. If trees are where the chickens can be turned among them and the ground raked or harrowed, the chickens will pick up many of the worms.

A little watchfulness and care in mending defects in waxing may often save a valuable graft. A little bucket of hot wax is needed. Where a scion is started it may be helped along by rubbing off a part, at least, of the suckers which are starting out below it. When growing very vigorously the new shoots may need bracing up to avoid being broken by the wind. A stake or stick tied to the limb are methods of support used.

FLORIST AND GARDENER.

Aquatic Plants and Water Gardening in California.

From an essay by E. D. STURTEVANT of Cahuenga Valley at the Claremont Horticultural Club.

SOIL.—Concerning the culture of aquatics, I will first speak of the matter of soil. The majority of these plants are gross feeders, and it is well nigh impossible to make the soil too rich for them. It is not necessary to go to a swamp or a natural pond to obtain what is suitable. It can be prepared upon your own premises. Any soil which will grow good vegetables will, if properly enriched, grow aquatics. A compost consisting of two-thirds good soil and one-third well-decayed manure, with a liberal sprinkling of bonemeal, is what we recommend. If you have a black, friable loam, which is intermediate between adobe and sandy loam, it would be excellent for the purpose.

PONDS.—The simplest arrangement for growing water plants is a large tub or half hogshead, partly filled with soil and located in a sunny position. A much better plan is to make a small pool by excavating the ground about two feet and covering the bottom and sides with concrete and cement. In a basin 8 or 10 feet across quite a variety of plants may be grown, using wooden boxes or shallow tubs to hold the soil. Those having fountain basins in their grounds can utilize them in the same manner. It is not necessary that there should be a continuous flow

of water; but during the growing season enough should be run in each day to prevent stagnation and to keep the plants in health. While most aquatics will flower freely in contracted quarters, they will attain greater perfection with much larger flowers if they have abundance of room both for the roots and the leaves. Basins 20 or 30 feet in diameter or even larger than this are desirable for growing a good collection. In growing the lotus in the same basin with nymphæas, care must be taken to confine the roots of the former to a given space, as it has the habit of spreading in all directions.

LOCATIONS.—It might seem at first thought that California, being such a dry country, the conditions are not favorable to the culture of water plants. But our city gardens are supplied with water in the same manner as in the East. In the country the windmill is ever the ready servant; and where irrigation is practiced, nothing could be more simple than to turn the stream aside to irrigate a water garden. Natural ponds and lakes are rare, but a few such exist, and I believe that they are suitable for the naturalization of the famous Egyptian lotus.

In the Eastern States we classify aquatics as tender and hardy. The tender kinds are, so to speak, bedded out during summer and removed to a greenhouse in autumn. During the last ten years it has been practically demonstrated that nearly all the tropical varieties can be successfully grown here and left out the entire year. A number of amateurs in Los Angeles are cultivating a choice selection, and at the Water Lily Nursery in the Cahuenga foothills nearly every variety of importance has been successfully grown. I am writing of that place and those portions of the State which have the same climate; but for localities where frosts are frequent or severe, I would recommend that the more tender kinds be either removed in autumn to warmer quarters or else protected by a covering of glass or oiled cloth. I will give a selection of standard varieties with some notes on their requirements in this region:

VICTORIA REGIA.—The Victoria regia is the grandest of all aquatics. This most magnificent relative of our common water lily is a native of South America, and is named in honor of the Queen of England. From a seed the size of a pea it will, under proper conditions, in seven months produce a plant having a spread of 30 feet in diameter with perhaps eight or ten leaves each 6 feet across. The flowers are lovely beyond description; but the monster leaves of the plant are its glory. It is most fascinating to watch the expansion and growth of these leaves on a plant of normal size. Out of the heart of the plant rises to the surface of the water an oblong ball or wrinkled mass of vegetable tissue about 10 inches across and covered thickly with long, sharp thorns. The next day it is expanded into a lovely bronze-colored salver some 18 inches in diameter and having an upturned rim tinted with crimson. From this time on its growth is about 8 inches a day until it attains full size. The stem, also covered with thorns, is joined to the leaf in the center, and is like a rope over an inch thick. The under surface of the leaf has a series of strong veins radiating from the center, and often 3 inches deep, giving it power to support readily the weight of a child, and, with the assistance of a few thin pieces of wood placed on the surface, it will support an adult. The rim of the leaf is also a great curiosity, being in the ordinary plant 3 inches high. A variety of recent introduction has this rim sometimes 6 inches high. The flowers on good plants are 12 inches across, pure white, with petals more numerous than in the common water lily. They exhale a most delicious perfume, like that of pineapples, which pervades the air for a considerable distance.

The Victoria has been grown in the Cahuenga Water Garden with fair success for several seasons. Their first opening occurs in the evening, and the following morning the flower closes entirely, to open the second evening, when another wonderful transformation takes place. Every snow-white petal has assumed a deep pink color, and the flower has lost its fragrance. A new flower appears every four days.

OTHER WATER LILIES.—*Nymphaea rubra*, a native of India, has flowers bright rose red color.

Nymphaea dentata has milk-white flowers with petals expanding horizontally, producing a flat, star-shaped flower.

Nymphaea devoniensis is a hybrid, with *N. rubra* and *N. dentata* as its parents. Its flowers are a bright rose red similar to *N. rubra*. If grown in pots these three kinds produce flowers 4 or 5 inches across. If treated something like the Victoria regia they bear flowers from 10 to 12 inches in diameter and leaves 2 feet across, a single plant covering a space 20 feet in diameter. Their blossoms expand in the evening, forming objects of great beauty by artificial light, though they remain open until noon the next day. They flower continuously from early summer nearly up to Christmas, when they gradually lose their foliage and remain dormant until April. Their roots are tuberous and are increased by offsets which form small, hard tubers.

Nymphaea lotus is a true water lily from the Nile river, and is sometimes called the lotus. Its flowers are white, but smaller and more cup-shaped than those of *N. dentata*, which they resemble.

Nymphaea zanzibarensis, from Zanzibar, is one of

the finest of the family, bearing flowers of the richest purple blue color and very fragrant.

Nymphaea zanzibarensis azurea has flowers of the richest azure blue, the finest of its color in cultivation.

Nymphaea zanzibarensis rosea has flowers of rosy pink color.

Under ordinary culture the Zanzibar varieties give abundance of good-sized blooms, but under liberal treatment they produce flowers and leaves as large as the other tropical kinds. Their blooms open in the morning and close in the evening like the common water lily. Though their roots are tuberous, the plants are most readily increased by means of seeds. *Nymphaea zanzibarensis* has the singular habit of sporting from seed. Without any attempt at hybridization, the product of a single pod will sometimes give all three varieties, the purple, blue and pink, and recently a crimson variety has appeared in the same manner. In California the African water lilies bloom continuously through the summer and fall. In my own garden, which is located in the Caluenga foothills, they are evergreen and give occasional flowers.

Nymphaea coerulea, which has been in cultivation many years, has pale blue flowers, fragrant, but smaller than the Zanzibar lilies.

Nymphaea odorata, the fragrant, white water lily of the East is too well known to need description.

Nymphaea odorata rosea, known as the Cape Cod pink water lily, is a most charming variety with flowers, nearly as deep a shade of pink as the rose *Hermosa*. They are fully as fragrant as the white ones and often larger in size. These two do not flower for so long a period as the tropical kinds but are so desirable that they should be in every collection.

Nymphaea candidissima is a large flowered form of *N. alba*, the native water lily of England. Its waxy white flowers, 6 inches across, are of exquisite form and freely produced both early and late. The plant is of the easiest culture and a favorite wherever known.

Nymphaea flava, a native of Florida, has sweetly scented yellow flowers. In California it seems more prolific of young plants than of blooms, and unless its roots are walled in by boards or masonry work it will spread in every direction.

Nymphaea mariacea chromatella is a hybrid, *N. flava* being one of its parents. Its fragrant flowers are fully as large as the common water lily with broad, waxy petals of a beautiful light yellow color, and bright orange stamens. The plant is of free growth, blooming early and late, and succeeds finely in California.

Nymphaea pygmaea, from Siberia and China, is the smallest-flowered species in cultivation, the white lemon-scented blossoms being about the size of a silver half-dollar.

THE LOTUS.—I now come to the lotus (*Nelumbium speciosum*), a plant of such remarkable interest and beauty. The lotus has also been a favorite flower in Japan for a long period of time. In these later days it has proved itself to be equally at home on the western continent. If some morning in the month of August you could pay a visit to a certain lakelet in one of the Eastern States, you might behold a thicket of green umbrella-like lotus leaves of nearly an acre in extent. Interspersed among them would be many hundreds of large, rosy blossoms standing above the leaves and from 3 to 6 feet above the water. But we have the lotus already in cultivation in California, and you will no doubt agree with me that it is worthy of all praise bestowed upon it. As to its culture, it prefers a heavy soil, well enriched. It may be grown in a large shallow wooden box, submerged in a fountain, or a more liberal space may be given to it in proportion to the size of your basin or pond. Those who have adobe soil may make an excavation, taking care that good soil is replaced in the bottom; the tubers may be planted in this pool which should be kept flooded during summer. During the winter season, while the plants are at rest, the pool will require no water, except what is furnished by the winter rains. The roots are tuberous and shaped like bananas. If it is desired to transplant them it should not be done until the growing season arrives. The Egyptian lotus has rosy petals, shaded to white at the base. There are several Japanese varieties in cultivation here; one beautiful variety has pure white flowers, is of a uniform rosy pink, and another white with crimson stripes. Some double-flowered forms have recently been introduced, but are at present rare.

OTHER AQUATICS.—There are many other aquatic plants which do not belong to the water-lily family, but which are both interesting and beautiful, and help to make variety in the water garden. Among these is the water hyacinth, *Eichhornia crassipes* major, formerly called *Pontederia*. It has swollen leaf stems, filled with air cells. The plant will grow floating around in deep water, but flowers most freely where its roots can take hold of the soil. The blossoms are rosy lilac, produced in large spikes. *Eichhornia azurea*, more recently introduced, has a creeping habit like a verbena, and flowers of a bluish color. These two plants do best if partially shaded from the full sunshine in summer, and sheltered from cold winds in winter.

Limncharis Humboldtii, or the water poppy, has

flowers of a lemon-yellow color, and somewhat resembles the California poppy of the fields. The plant prefers shallow water.

The Cape pond weed (*Aponogeton distachyon*), though not a showy plant, is interesting on account of the fragrance of its small white flowers and its habit of producing them in winter. It is now in bloom in some of our city gardens.

Ouvirandra fenestralis, the lace leaf or lattice leaf, has somewhat narrow leaves, about a foot long, which grow entirely under water. They are of an olive-green color, and consist merely of the framework or veins of the leaf with the fleshy part entirely absent, thus presenting the appearance of a beautiful piece of network or skeletonized leaf; hence the name lattice leaf.

Some aquatic plants are found floating on the surface of the water, without attaching their roots to the soil. *Pontederia crassipes* has been mentioned; *Pistia stratiotes*, the water lettuce of Florida, is another, also, the *Azolla* or floating moss, resembling a beautiful moss or selaginella. This I have found growing wild in California.

THE ENVIRONMENT.—Before leaving this subject of aquatics I will speak of another which is properly connected with it. As the beauty of a painting is enhanced by a fine setting, so should our winter garden have a background of semi-tropical trees and plants. How great an advantage do we here possess over those who live in colder latitudes, when we can use for this purpose such plants as the feathery papyrus, giant grasses, large-leaved caladiums, musas, the towering bamboo and a variety of noble and beautiful palms.

Cucumber Growing and Pickle Making.

TO THE EDITOR:—When almost everyone is so fond of pickles it seems a pity that they are not more generally made at home. They probably would be if so many of us didn't have the idea that they were a good deal of trouble, besides being difficult to make. On the contrary, they are easily made and are well worth the work entailed in preparing them. Any woman, whether she lives in town or country, may just as well have a nice lot of pickles every year as not. A great many cucumbers may be raised on a very small piece of ground if they are properly worked. Last year, besides using a good many for the table when fresh, I made over fifteen gallons of pickles, and only had eight or nine hills of cucumbers.

GROWING.—The cucumbers need a warm, rich soil and should not be planted in the garden until the weather is settled and warm, as they will not thrive until the ground is thoroughly heated.

Almost any good cucumber will make a good pickle. Any one liking large pickles will be pleased with the results obtained by planting Long Green. It is not strictly a pickling variety, but it grows rapidly, is an excellent producer and makes a very nice flavored pickle. Anyone desiring a smaller or medium-sized pickle will be pleased with the White Spine or Green Prolific.

Make the hills 4 feet apart each way. Plant plenty of seeds in each hill, and if more than four come up the extra ones may be taken up, after the second leaves appear, and transplanted in other hills. In transplanting, let as much earth cling to the roots as possible. Plant quite deep in the ground, water well, and cover the young plants with paper for the first day or two, to keep from wilting.

IRRIGATION.—I have had the best success in giving them water in the following manner: After the plants have become quite strong and thrifty and show signs of running I dig a hole, large enough around to hold a quart can, as near the roots as possible. I make some holes in the bottom of the cans and place them in the holes near the plants. They need not be set more than 2 inches deep—just enough to keep them from turning over. Fill the cans with water every other day. This will furnish plenty of moisture for the roots. Of course, they may be watered the same as any other plant if preferred.

GATHERING.—Commence to gather your cucumbers just as soon as they are a good average size. After once commencing to gather them all that are of a suitable size must be gathered regularly, as the vines will stop bearing if the cucumbers are allowed to ripen.

Every other day (while the dew is still on them in the morning is the best time) take a sharp knife and cut them off of the vines about $\frac{1}{2}$ inch beyond the end of the cucumber. If the little stems are not left on the pickles will spoil. Wash them well, being careful not to bruise or scratch any of them. Any that are not perfectly sound must not be used.

PICKLING.—Never use a barrel or crock that has had anything greasy in it, as grease invariably spoils pickles. After draining a few minutes spread a good, thick layer of dairy salt on the bottom of the barrel and begin to lay the cucumbers on the salt, putting them in side by side, until you have a layer of cucumbers, then sprinkle a layer of salt over the row, then another layer of cucumbers, and so on, always finishing with a layer of salt. The cucumbers may be put in whenever gathered, whether there is a full layer or not.

After a time brine will begin to make, and then

they must be weighted down, first putting a cloth on the cucumbers. Keep filling, in the above manner, until you have all you wish, or until the barrel is full. The pickles must be kept under the brine all the time. Put a cloth over the top of the barrel and then lay the barrel cover on the cloth to keep out dirt and mice.

The pickles will be ready to use in about six weeks. When you wish some, take out about what you think will last for a month and put them in clear, cold water. Keep changing the water every day until the salt is out of the pickles, then put them in a crock or glass jar and cover them with vinegar. If the vinegar is very strong it should be weakened a little, as too strong vinegar will eat the pickles and make them soft.

Scum will sometimes form on top of the pickles, but it can be skimmed off as the pickles are taken out, and does no harm. If they are well weighted the scum will form on the cloth directly over the pickles, and this cloth may then be taken out, the scum rinsed off, then put back again.

Pickles prepared in this manner will keep an indefinite length of time, and anyone once trying them will always make their own pickles, as they can't be surpassed by the costliest ones in the market.

MRS. ERNEST E. DAYTON.

Prunedale, Monterey Co.

THE VINEYARD.

The California Wine Product.

Mr. Andrea Sparboro of San Francisco furnishes a statement about the California interest to the State Board of Trade, from which we take these portions:

With the improvement in the quality of our wines, both our domestic consumption and our export trade have been steadily increasing, as is shown by the following figures of the production of wine for a series of years:

Year.	Vintage, gals.	Export, gals.
1867	2,500,000	245,000
1868	4,000,000	359,000
1869	3,000,000	452,000
1870	3,800,000	590,000
1871	4,500,000	693,600
1872	3,000,000	578,700
1873	3,500,000	500,000
1874	4,000,000	633,550
1875	4,000,000	1,012,000
1876	4,000,000	1,065,400
1877	4,000,000	1,430,600
1878	5,000,000	1,780,000
1879	7,000,000	2,181,300
1880	10,200,000	2,362,700
1881	8,000,000	1,623,700
1882	9,000,000	2,901,000
1883	8,500,000	3,159,200
1884	10,000,000	3,356,900
1885	11,000,000	4,230,300
1886	18,000,000	5,182,600
1887	15,000,000	6,299,500
1888	17,000,000	7,305,190
1889	15,500,000	8,177,486
1890	17,500,000	9,442,092
1891	20,200,000	11,114,029
1892	15,000,000	11,117,752
1893	24,700,000	12,326,033
1894	16,000,000	14,031,405
1895	14,000,000	14,920,825
1896	13,500,000	14,835,893
1897	34,000,000	15,155,330
1898	18,529,000	16,610,982
1899	16,000,000	16,500,000

There are now about 80,000 acres of bearing grapevines in California, producing an average of 250,000 tons of grapes per annum, which yield about 30,000,000 gallons of wine, including all the varieties of red and white wines and also the sweet wines, such as port, sherry, Muscat, Malaga, etc., giving employment to about 10,000 people. The State also produces a large quantity of grape brandy, a portion of which is used to fortify the sweet wines, and a quantity of it finds markets throughout the world.

When it is remembered that California is the only State in the Union where the vitæ vinifera grows to perfection, and consequently the only locality in the United States where fine wines can be produced; when we consider the fact that we have for our legitimate market seventy-five millions of our own people and twenty-five millions of wine drinkers in the central and southern Republics and Manila; that while the people of France and Italy consume twenty-five gallons of wine per capita per annum, the American people as yet use only one-half gallon yearly per head of this healthy and invigorating beverage; that France and Italy each produce over one billion gallons of wine per annum; that the State of California is larger than the Kingdom of Italy, and it could produce just as much wine as is now produced in that sunny country, we cannot but admit that the time will come—and no man knows how soon—when the wine industry of California will surpass that of any other product of the State; then the hillsides of California, which are now either lying idle or merely used as sheep ranges and can be bought anywhere from \$6 to \$10 per acre, will be set out in grapevines, pay interest on an original cost of \$100 per acre and give employment to several millions of industrious people.

Agricultural Review.

ALAMEDA.

EVAPORATED VEGETABLES.—Oakland Enquirer, April 13: The Bodwell fruit dryer of San Leandro will commence operations three weeks earlier than was expected. The reason for the early start is a large order from a San Francisco firm. It calls for 100,000 pounds of potatoes and 15,000 pounds of evaporated carrots, parsnips, celery and turnips.

CANNERY BUSINESS.—The plants of the Oakland Preserving Company and the Hickmott Canning Company, which are under control of the California Canneries Association, are being put in condition for the coming season, which is expected to be a very busy one. Improvements are being made in the cooking vats and machinery, and operations will probably be started about June 1st if the canneries are run on cherries, and probably a little later if they start on apricots. The cannery at Milpitas, which is under the same control, is now employing 200 operators in putting up asparagus.

BUTTE.

AGRICULTURAL DIRECTORS APPOINTED.—Oroville Register, April 12: George B. Daniels and F. C. Lusk have been appointed Directors of Agricultural District No. 3.

COLUSA.

FLOWING WELL.—Colusa Sun, April 11: G. W. Parkinson has just completed a well on land belonging to the Colusa County Bank, and farmed by E. G. Morten, from which the water flows over the top of the casing, 16 inches above the ground. The well is 286 feet deep, and it was 284 feet to a bed of coarse gravel. The casing is down to the gravel. It was 11 feet to surface water and there was no indication of any water-bearing stratum until this gravel bed was reached.

DIRECTORS' MEETING.—At a directors' meeting of Agricultural District No. 44 a committee on hall and general exhibits was appointed, consisting of Messrs. J. Grever, T. O. Arens and G. W. Allgaier. The following were appointed to solicit for the general exhibits, consisting of live stock and all other products of the county: P. Peterson Sr., Sites; D. Crossett, Stonyford; J. F. Campbell, G. B. Harden, Maxwell; J. W. Browning, Jesse Poundstone, Grand Island; George Meckfessel, Berlin; H. H. Seaton, W. H. Duffield, Arbuckle; W. H. Hubbard, G. F. Packer, Princeton; Frank Shuckman, Sulphur Creek; W. H. Buster, Alfred Davis, Sycamore; W. H. Cain, Charles E. King, College City; H. S. McMichael, Venado; J. F. Easton, Ladega; Peart and McLean, Grimes; King Becker, J. F. Feuch, Williams; W. W. Boardman, T. Stockford, Leesville; L. F. Moulton, George P. Ahlf, Colusa.

FRESNO.

POULTRY AND HARE FANCIERS' MEETING.—Fresno Republican, April 12: The monthly meeting of the Fresno Poultry, Pigeon & Pet Stock Association took place last night in the City Hall, with Vice-President C. W. Kirby in the chair. Dec. 18th to 21st was definitely fixed as the time for holding the next Association show. There has been some trouble in finding a good judge for the American class, and it was decided to bring J. W. Downing of Denver here, who has a national reputation as a judge of poultry. Twenty-seven new members were elected to the Association. Nolan Davis was appointed Association correspondent for the different poultry journals.

PUMPING WATER FOR IRRIGATION.—Fresno, April 9: A novel irrigation scheme which promises important results is about to be subjected to a practical trial in the Elkhorn district. Within the past few years the bed of Summit lake, like that of Tulare lake, has been completely dried up, and wells have been sunk for the purpose of pumping water on to the low-lying lands adjacent to it. The scheme is an outgrowth of the abandoned Sunset irrigation plan, which contemplated the establishment of pumping stations in the

district, with plans to keep the basins filled from the Kings river. The latter no longer flows up to its old flooded level in Summit lake, but it is known that the subsoil of the latter is fully saturated with water, and the wells already dug are full nearly to the surface of the lake bed. There are about a dozen wells, and pumps are already in place to operate about half the number as a starter. The work is under the direction of C. D. Davis, civil engineer of this city. The land to be irrigated is about 1400 acres, and is owned by a San Francisco company, of which Mrs. C. T. Mills is the principal stockholder. Four hundred acres will be planted in potatoes and the remainder will be converted into a vegetable garden.

ORANGE.

DIRECTORS ELECTED.—Anaheim Gazette, April 12: At the annual meeting of the stockholders of the Deciduous Fruit Association the following directors were elected for the ensuing year: J. B. Neff, J. B. Rea, George A. Hunter, John Eyemann and L. W. Kirby.

RIVERSIDE.

OFFICERS ELECTED.—Riverside Press, April 14: At the annual meeting of the stockholders of the Hemet Fruit Association the report of the directors indicated a thriving financial condition of the association. Following are the re-elected officers: J. A. Brown, president; J. H. Betterell, Jr., secretary; directors, J. A. Brown, P. N. Myers, A. Saunders, C. McDiarmid and J. H. Betterell.

SAN BERNARDINO.

ORANGE SEASON ALMOST ENDED.—Redlands Citigraph, April 14: The orange season is about over in this vicinity. There remain some Seedlings and Sweets, and the shipping of Valencia will soon begin, as they are now fully colored and quite sweet. Reports of orange production in and about Redlands this season average well with past years. Prices have been fairly good and receipts run all the way from \$350 to \$600 per acre, according to the age of the trees, the oldest being about ten years.

LARGE DIVIDENDS.—Ontario Record: The two orange exchange associations at North Ontario have paid out \$25,000 in dividends to their members on March delivery. This is the largest dividend ever declared by these associations in any one month's business.

PROFITABLE ORANGE GROVES.—Redlands Facts, April 9: As the cleanup of the orange crop progresses records are obtained which prove interesting to orange growers. One of the profitable orchards is that of C. L. Clock. Mr. Clock has seventeen and one-quarter acres of Navels seven years old, three acres four years old, and two acres three years old. The crop was sold at 2 cents a pound, giving him a net return of \$5235.92. Another splendid crop was that of John W. Chambers, who has 450 trees of Navels, and for the crop he received \$1525. This is at the rate of \$3.34 per tree. W. C. Hargraves has 182 tree of Navels on the Williams tract. These trees are nine years old and the crop sold for \$598, or \$3.32 per tree. One of the finest crops of the year was that of E. Cram of East Highlands. His orchard of six acres has a few Mediterranean Sweets among the Navels, all of them nine years old. For this year's crop he was paid \$3555, which amounts to nearly \$6 a tree.

SANTA BARBARA.

ASHES DESTROY WOOLLY APHIS.—Lompoc Record: By actual experiment we have proven that ashes placed plentifully about apple trees affected by woolly aphis will in a short time destroy them. The insect can not thrive where this precaution is taken. To exterminate the aphis on the body of the tree, no better remedy than the coal oil swab has yet been found. In applying coal oil, do not more than touch the aphis, as too much oil injures the trees, often causing the bark to die. A good swabbing of coal oil, immediately followed by a similar swabbing with a solution of caustic soda, corrects all bad effects of the oil on the bark and promotes a healthful condition and appearance of the bark. The aphis, to be removed, must be continually fought by these methods or it will soon spread over the entire orchard. It is foolishness to destroy trees to get rid of this insect, for once in an orchard it is there to stay, no matter how many trees one uproots. The way to fight the aphis is to destroy it whenever it appears, and in this way its ravages will be reduced to a minimum, with little or no danger resulting.

SANTA CLARA.

NEW FRUIT WAREHOUSE.—Mercury, April 15: The confidence of Porter Bros. in the continued and increasing prosperity of the fruit industry is proved by the constantly advancing activity of the firm's operations in San Jose. An increase in

the facilities of the firm is especially gratifying at this time, when Porter Bros. have just gone into the California Cured Fruit Association and are doing all they can, through their agents, to promote the interests and success of that organization among both growers and packers. So great is the confidence of the firm in the association that almost immediately after joining it they made arrangements to more than double their packing, warehouse and office facilities in this city. Yesterday a large force of men was put to work clearing the ground and making preparations for the erection of a large three-story office and warehouse. The first floor of the new building will be used for the handling and packing of green fruit, the second floor for mixed cured fruits, and in the third floor there will be an extensive box making plant, the machinery for which will be the latest and most approved known to the trade.

SANTA CRUZ.

CREAMERY OFFICERS ELECTED.—Watsonville Pajaronian, April 12: At a meeting of the directors of the Watsonville Creamery Co., John E. Trafton was elected president; W. G. Hudson, vice-president; Geo. Jessen, secretary; Pajaro Valley Bank, treasurer. The creamery is running three separators and is receiving 20,000 pounds of milk daily. During March it made 21,494 pounds of butter, and paid dairymen \$3654. During the past year it made 190,232 pounds of butter and paid \$36,479.12 for milk—an average of \$100 per day.

SOLANO.

IRRIGATION FROM WELLS.—Dixon Tribune, April 13: Foster Brothers are having a number of new wells bored on their fruit ranch near Tremont. One of the wells which was bored to a depth of 150 feet was tested and could be lowered but 2 feet after several hours steady pumping with their large gasoline pumping plant. Foster Brothers have mounted their pumping plant on wheels and with the establishment of a system of wells about the farm will be enabled to carry on extensive irrigation operations during the summer.

CROP PROSPECTS.—Vacaville Reporter, April 14: Taking the entire fruit section tributary to Vacaville into consideration, it looks as if we shall fall much short of a full crop. In some orchards the promise is for a full crop, but this is not the general situation. Averaging conditions we estimate the outlook to be for about three-quarters of a crop. Yesterday Henry Eversole brought into this office a stalk of wild oats 7 feet 3 inches long, which was cut on his place. There are many more just as long and still growing.

EARLIEST CHERRIES.—On April 9 the first box of cherries this season was brought into town by Lee Gates. They were shipped to Chicago by express, consigned to Porter Bros. Co. A little later a box was brought in from F. B. McKevitt's bill ranch. This went East through Pinkham & McKevitt. Then Fred Buck brought in a box, which went to Chicago through the Earl Fruit Co. Then another box was brought in from Robinson Bros.' ranch, and this went East through Frank H. Buck. Each of the four shipping houses had a consignment of cherries on the same day, quite an unusual thing, the first shipment usually being separated from others by several days.

SONOMA.

PRUNE CROP.—Healdsburg Tribune, April 12: During the past week it has developed that the prunes in this section are dropping heavily. W. N. Gladdon states that about 99 out of every 100 prunes on his place will fall. Ira Proctor reports the same condition at his prune orchard in Drp Creek valley, and similar statements are made by other growers. A. E. Burnham thinks it too soon to predict the yield, but his trees indicate a not very large crop. Rev. E. B. Ware of Alexander Valley states that his orchard will yield a good crop. Apples also will probably be a light crop, but peaches will yield well. W. M. Bell states that his young prune trees, just coming into bearing this year, are all heavily laden and the old trees will have a fair crop, considerably larger than last season's yield.

TEHAMA.

FRUIT PROSPECTS.—Red Bluff News, April 12: Prospects for large pear and apricot crops are not as good as they were last year. Many of the pear trees are dropping the buds just after blossoming. Apricots are not bearing as well as last year, when a big crop was harvested. Peaches and prunes will make immense crops, which will offset the lightness of other fruits.

LARGE ACREAGE PLANTED.—Red Bluff Cause, April 4: Tree planting is about done at Corning. The Maywood Colonies Fruit Association have set out

about 700 acres of trees this spring, mostly for non-residents. They have contracted to cultivate and care for about 900 acres more. There will be a good crop of fruit. Apricots and peaches are not as thickly set on the trees as last year, which is a good thing, as it saves thinning.

AGRICULTURAL DIRECTORS APPOINTED.—Oroville Register, April 12: G. G. Kimball and Robert Burris have been appointed Directors of Agricultural District No. 30.

VEGETABLE FREAK.—Red Bluff News: H. C. Hoffman brought a singular vegetable freak into this office. It is a radish, the seed of which he planted several weeks ago and which has attained a growth of 6 inches. An inch from the top is a knot in the radish, as plain as though made upon a piece of rope. In growing down the vegetable probably met with an obstruction, which caused it to turn upward, and again seeking its true course downward, crossed the loop and made the well formed knot.

TULARE.

COST OF IRRIGATING ALFALFA.—Tulare Register, April 13: Walter Bagly of Tipton has been pumping water and irrigating alfalfa. He hires an engine and a man to run it; he also has to furnish wood. He irrigates five to seven acres a day at a cost of \$1.50 per acre.

SKIMMING STATION.—The Tipton skimming station is gaining a little. There were twenty-two patrons for the month of March. The average test of the milk was 3.8%; 2126 pounds of butter were produced for the month. Several hundred dollars were distributed among the patrons for March.

PROFITABLE FARM.—James A. Boyd of Traver received good returns from his forty-acre home the past year. He has eleven acres in peaches, seven of which are in Albertas and Muirs and four in Clings. From these Mr. Boyd sold \$2600 worth of dried peaches. From five acres of vineyard he sold \$977 worth of raisins. The remainder of the forty acres which is not occupied by farm buildings, etc., is devoted to alfalfa. He sold three calves for \$60 and \$130 worth of hogs, besides \$200 worth of honey. No account has been kept of the money received by Mrs. Boyd from poultry, eggs, etc., but the above figures show a good income.

YOLO.

CREAMERY MEETING.—Woodland Mail, April 13: The directors of the Woodland creamery held their regular monthly meeting yesterday. The secretary's report shows that there will be distributed the sum of \$4200 to the patrons on the 15th inst. This is the largest amount ever distributed in any one month. There was an average of 19,000 pounds of milk received daily during March, which was an increase of over 6000 pounds for the daily average of the same month of 1899. On account of the great increase in the milk brought in, it has become necessary to order another separator, and it will be installed in a few days.

Weak Children

How sad it is to see weak children—boys and girls who are pale and thin. They cannot enjoy the sports of childhood, neither are they able to profit by school life. They are indeed to be pitied. But there is hope for them.

Scott's Emulsion

has helped such children for over a quarter of a century.

Your doctor will tell you it is both food and medicine to them. They begin to pick up at once under its use. Their color improves, the flesh becomes more firm, the weight increases and all the full life and vigor of childhood returns again.

At all druggists; 50c. and \$1.00.
SCOTT & BOWNE, Chemists, New York.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

Love and Labor.

Who most achieves is most like God, I hold;
The idler is the black sheep in the fold.
Not for the hardened toiler with the hoe,
My tears of sorrow and compassion flow.
Though he be dull, unlettered and not fair
To look upon; though he is bowed with care,
Yet in his heart if dear love folds its wings,
He stands a monarch over unloved kings.

One sorrow only in God's world hath birth—
To live unloving and unloved on earth;
One joy alone makes life a part of heaven—
The joy of happy love received and given.

Down through the chaos of our human laws,
Love shines supreme, the great external cause,
God loved so much, his thoughts burst into flame,
And from that sacred source creation came.
The heart which feels this holy light within,
Finds God and man and beast and bird its kin;
All class distinctions fade and disappear.
Death is new life, and Heaven he sees a-
near.
Brother is he to "ox" and "seraphim,"
"Slave to the wheel," mayhap, yet kings to him,
And millionaires seem paupers if from them
Life has withheld its luminous great gem,
Or if his badge be scepter, hoe or hod,
That man is king who knows that love is God.

—Ella Wheeler Wilcox.

At the Waking o' the Year.

Nor Easter bells nor bloom they knew—
The coifed maids austere!
Yet white for them love-lillies blew
At the waking o' the year.

In rhythmic time to chant and chime
The silken maids so dear
Full softly go through lily-blow
At the waking o' the year.

And still in time to chant and chime—
Ah! soft. Ah, silver clear!
And sweet and low! love-lillies blow
At the waking of the year.

—Martha McCulloch Williams.

The Smith Girl's Slight.

Jeff Slogan and old man Matterson sat at the kitchen table long after the remains of supper were cleared away. It was a night of reminiscence with the old man, and over his crabapple cider he told of the bears and wolves he had slain in the days when Tennessee was young. "My old granddad left me his rifle," said he, glancing toward a corner of the room, "and many a time I've been advised to have a percussion lock put on it, but a flintlock was good enough for him and it's got to be good enough for me. Of course you've seen the gun, but I'll show it to you again."

It's a beauty," said Jeff.

"Well, yes, unless you can find a better word. And let me tell you something, but you mustn't say anything about it. Granddad was beginning to get pretty old and little things had begun to bother him. One of his daughters married a no-account stage driver, and his half-witted son cut a fellow all to pieces at a sawmill. So he fretted a good deal. Well, one night he was coming home from a muster, and a man named Bridge Peters with him. All at once granddad stops in the road and says to Bridge: 'If I only knowed which one of them stars up thar was my unlucky star, I'd shoot it out.' Bridge asked if he thought his gun would tote that far, and the old man hooted like an owl. 'Don't you worry about that,' said he. 'Just pick out the star you think is the cause of my bad luck and out she goes.'

"Bridge was a sort of reckless fellow, so he looks up, he does, and says: 'There she is, that star off there about 15 feet from the moon.' The old man didn't hesitate a minute. He raised his gun—this here old one right here—and she cracked like a whip—and

what do you think happened? Out went the star like snuffin' a tallow candle. Bridge he took to his heels, and it was enough to scare any man, but Granddad didn't run. He walked off slowly to show the other stars that he wasn't afraid, but he begins to get sick at his stomach, and by the time he got home he could hardly hold up his head. And sir, he lay for four weeks, and then died."

Jeff looked hard at the old man and said: "I don't believe a word of it."

"How do you account for it?"

"I account for it by not believing it; that's how." Jeff was in a sorrowful mood that night, and was not prepared to believe even the most apparent truth.

"What are you thinkin' about, Jeff?"

"Liza Smith and her party."

"Sorter in the dumps because she didn't ask you?"

"Well I don't like it."

"Why don't you kill her dog?"

"What good would that do?"

"Why, don't you know that the best way to get even with a high-headed woman is to kill her dog? It is—there's a sort of a charm about it, and if you kill a woman's dog and she don't find out who does it, she'll fall in love with you. It's a fact; she'll drap right down into pure love. Say, that Smith girl has a dog that she thinks the world of. Why don't you kill him as you go by there to-night on your way home?"

"I'm half a mind to. Got a pistol?"

"No, but you can take Granddad's gun."

"Is she loaded?"

"With a double charge of powder and a slug an inch long."

"I'm half inclined to do it."

"I'll bet the gal drops down into the purest sort of love. I jest want to see it; there ain't nothin' puttier to me than a first-rate article of love."

Only when he was out in the road did Jeff realize that he carried the old gun upon his shoulder. He halted and, bare of head, sat upon a rock to let the cool air fan him. From over the hilltop came the bark of the Smith girl's dog. Jeff got up and strode along until he came within sight of Smith's house. He could hear the merrymaking of the Smith girl and her guests. Through a window he saw the company dancing; and the Smith girl danced with a fellow named Ab Squat. Jeff hated Squat. He was cross-eyed and low of brow. He thought that he saw her smile at Squat, and he gripped his gun. But there was no murder in his heart. He aspired only to assassinate a dog. Jeff saw him coming down the hill.

The dog came at a gallop, cut a caper of delight, and before Jeff could fire, had licked his hand. Then there came a gulp of remorse. He put down his gun, stroked the dog, and hugged him in his loneliness. "I wouldn't hurt you old fellow," he said. "They thrust you into the darkness, and they don't invite me out of it, and so we are brothers. Hello! there is the moon, brim full, just above the trees." The dog whined. "Just as well shoot at it as to bark at it, old fellow," he said. He took sight and touched the trigger. Off went the gun. And then Jeff's heart flew to his mouth. The moon exploded, and the sky was full of fiery snakes. The dog howled. Jeff dropped the gun and, over the logs and through bushes, tore home.

When Jeff reached home the world was dark save the pale stars slowly weeping out their light. He went to his room, and sitting at the window, strove to reason with himself. But it was of no use to reason. He had seen the moon fly to pieces and fill the air with snakes. "There's no use in talking, I've done it," he moaned. "The moon is gone. No use trying to reason—gone. And here I am sick at the stomach, and will keep on getting sicker till I die. People can't plant their potato crops in the dark of the moon, because there won't be any. And when I die the moon will come back, and all the people will be glad."

He went to bed and tossed for a long time; he slept finally, but what a sleep! Old women came and begged him to give them back the moon. They couldn't make soap without it. Maids came and on their knees implored

him. There was to be no more love-making. Poets flocked from afar to revile him; and the ocean stood dead, with no tide. When he awoke the sun was shining. And he smiled, believing that it was all a dream, but just then he heard his father talking in an adjoining room. "Yes, they were having a good time over at Smith's, but somebody shot out the moon, and—"

Jeff fell back, sick almost unto death. They called him to breakfast, but he moaned that he was sick, and they let him lie there. He was gagging when his father came into the room.

"What's the matter with you, Jeff?"

"I don't know, sir."

"What time did you get home?"

"I don't know, sir."

"Seem to be sorter short on knowin', don't you? Were you at Smith's when the moon was shot out? What's the matter with you? Why you've got the ague. Well, sir, it was a funny thing. You know that Smith doesn't like for his company to stay late, so he told the boys that they might remain till the moon went down. Well, an ingenious fellow hit upon a plan. He got hold of a cheese box, put a kerosene lamp in it, pasted a piece of greased paper over it and, just as the moon was goin' down behind the hill, hung the box high up in a tree. The old man can't see very well, and it fooled him completely till some fellow came along and shot—what's the matter with you? What are you sayin'? Goin' to git up, are you? What makes you cut them capers. Folks say you look like me, but I never seed the day that I had as little sense as you've got."

The Country Girl.

As you get glimpses of the great and busy old world lying out and beyond the cottonwood groves, the fields of grain and the great cornfields which bound the horizon of the old home in the country, and read of woman's success in fields of art, music, literature, fashion and professional life, you gaze long and wistfully, like Joan of Arc, as she listened for the voices, hoping that a call might come for you to make name and place in the great world beyond. The life that is yours seems more and more prosy and humdrum and possibly useless, its duties a never-ending round of iteration, its pleasures tame and unsatisfying, and you dream of bright jewels, elegant dresses, the opera, the dance, the world's applause and devotion, and would that your prince would some day appear and bear you away from the fields and the country home to the Elysian land of your day dreams.

Now, little girl, listen and we who are older than you will tell you the truth—the world that you so long for is a disappointment, an illusion, a mirage. It is not what you think it is. It is not what the books you read say it is. It is no place for you. It is, while brilliant, hard-hearted and cruel, wrecking and disappointing a hundred girls who are tempted by lures where it grants success to one.

The most pitiful work done by woman is that done by country girls who fight the battle of life in our large cities. The competition is so merciless, the temptations so great, the lack of sympathy so manifest. Learn to be content where you are. Borrow from the world beyond whatever of knowledge, grace and culture you can, and here-with sweeten, enlarge and beautify your country home life. Look for your prince among the waving cornfields, or see him caressing the pets of his herd, and, cheerfully and sensibly accepting the limitations of your sphere, so train and qualify yourself that some day you shall be called to minister to and preside over that most imperial of homes—the home of the intelligent American farmer.

And others' follies teach us not,
Nor much their wisdom teaches;
And most of sterling worth is what
Our own experience preaches.

—Tennyson.

WHAT did the little chickens say when they saw an orange in the nest instead of an egg? "See the orange marmalade!"

Bed Time Story.

"If mothers only realized how much of the restlessness of children during the night was due to overwrought brains they would be more careful in the choice of the bedtime stories," said the thoughtful mother.

"I wish I were able to write all the go-to-sleep stories that are told to the little ones all over the land," she continued. "It makes me positively sad to think of the small brains that are filled with distorted images, hobgoblins, ogres, giants and the like, just as reason is losing its hold upon them for several hours."

"I don't think mothers realize what an influence upon a child's life, and even upon its life after it has ceased to be a child, is exerted by this apparently trifling matter of how it goes to sleep."

"Every night when I catch my little daughter working off the big thoughts that sweep over her brain as her tired body begins to relax, while her mentality seems to be briefly and proportionately stimulated, I tremble to think of the harm done to her or any child—for mine is not an abnormal child in any way—by an ignorant nurse or thoughtless parent."

"The fact that every normal child cries out for a bedtime story shows that its mental nature needs it, just as its physical nature craves sweets. You want to give your child pure candy, so give him the adulterated story."

"Leave out the fearful personalities, the grim and gigantic figures; these, even if they are properly vanquished by the gallant hero, are too distinct for the crib-side tale."

"Sit down by your little one's bed and speak softly and evenly. Weave a fanciful but quite story, that tells of pretty streams and birds and loving little boys and girls—these woo sleep to the weary, but active, little brain, not with its suffocating pressure of the gathering storm, lit with lurid flashes, but with the soft clouds of the sunset horizon, that change from rosy pink to tender enveloping gray, and gradually deepen into restful gloom."

Choctaw Courting.

Love-making of a fast order is now going on in the Choctaw nation, Indian Territory, and it is estimated that at least 1000 white men will carry off Choctaw brides before the first of next month. About 5000 white men have already won Choctaw brides and the land and money that accompany them. The cause of the rush is the recent announcement of the Dawes commission that after the first of the month all persons not Choctaws by blood will not be enrolled on the citizenship list. This means no white men who marry Choctaw women will be allowed to share in the lands and money of the Choctaw tribe. Hence quick love-making on the part of the civilized man.

The Choctaw girls are rather pretty and some are highly educated. Those who are not fullbloods refuse to marry Indians, hence there is a great demand for whites. Choctaw girls marry at the age of 17. Because of their 550 acres of land (equal amount being given to their husbands) no trouble is experienced in finding a suitable companion.

The complexion of these girls is a clear white. Their eyes and hair are black, as a rule, although some are perfect blondes. They are of a kind and loving disposition, and are said by the white men who have tried it to make excellent wives.

To avoid tramps and degenerates marrying these girls, the Choctaw laws provide that all white men, before they can be admitted to the tribe, must produce recommendation of a good character from the county judge of the county where they last resided.

It is said that some of the most beautiful and popular girls of the Choctaw tribe have received proposals of marriage from alleged French and English men of title, but, because they refused to prove their ancestry, were rejected.

Emma Calve's Mistake.

Madame Calve tells this story on herself: "When I went to the Theatre de la Monnaie in Brussels in 1881, I made my debut as Marguerite. My second performance was to be Cherubino. At that time I was very slight. My neck and arms were thin, and so of course were my legs. I did not think I could possibly appear in breeches without something to make me look a little plumper. So I went to the costumer of the theater and told him I wanted some pads. He made them according to his own ideas of what beautiful legs should be, and sent them to me so late that I had no time to try them on. I don't know what I must have looked like when I stepped on the stage thin and girlish from the waist up, but provided with most enormous calves. After the first act the manager rushed around to my dressing-room. 'My Heavens,' he exclaimed, 'where in the world did you get those legs. They certainly are not your own.' I admitted that they were not, and said I thought I was too thin to dispense with pads. 'Don't you know,' he said to me, 'that a young girl with straight slender legs is far better suited to the part of a page than when she disfigures herself with such things as those? Take off the pads and go out in your own legs.' I decided to follow his advice. When I came on the stage again I was thin, but at least symmetrical. The effect on the audience was startling. I seemed to see the people in the theater craning their necks to discover what had happened to change meso. The conductor of the orchestra stared at me as if his eyes would pop out of his head. After a moment or two the cause of the astonishing alteration in my looks seemed to be understood and there was a titter of laughter through the audience. Since that time I have never worn pads."—Collier's Weekly.

Opportunity.

This sonnet, written several years ago by John James Ingalls, is perhaps not so well known as one or two of Ironquill's, but its merit is gaining for it wide popularity. The Kansas weeklies have been giving it a revival in the last month. The poem is as follows:

Master of human destinies am I!
Fame, love, and fortune on my footsteps wait.
Cities and fields I walk; I penetrate
Deserts and seas remote, and passing by
Hovel and mart and palace—soon or late
I knock unbidden once at every gate!
If sleeping, wake; if feasting, rise before
I turn away. It is the hour of fate,
And they who follow me may reach
every state
Mortals desire, and conquer every foe
Save death. But those who doubt or
hesitate—
Condemned to failure, penury and woe—
Seek me in vain and uselessly implore.
I answer not, and I return no more!

"Cordially Yours."

Interesting conclusions are drawn from a study of the different ways writers subscribe themselves. The curt "Yours" and "Yours truly" are found not only in business letters but in personal notes as well, for there are plenty of correspondents who don't believe in gush, and who think that "Yours truly" or "sincerely" means about all they wish to convey. Opposed to these sensible and essentially practicable persons is that class of writers—made up usually of young and enthusiastic individuals, as a rule of the gentler sex—who throw words about as carelessly on paper as they do in conversation, and who sign themselves "Affectionately yours" even when writing to casual acquaintances. "Cordially yours," by the way, is seen more and more frequently now in notes between acquaintances who are on distinctly friendly or cordial terms. After all, "Your friend," when it can be used truthfully, is a simple and satisfactory way of ending friendly letters. Some people have the habit of not pre-facing their names with any set form of words at the end of letters. They

stop when they get through and simply write their signatures, this being an easy way out of the difficulty.

April.

Oh, month that comes with
rainbows crowned,
And golden shadows drest;
Constant to her inconstancy
And faithful to unrest.

Higher than the perfect song,
For which love longeth,
Is the tender fear of wrong,
That never wrongeth.

—Bayard Taylor.

DOMESTIC ECONOMY.

Cooking Dried Fruit.

The value of dried fruit as a food and its acceptability to the palate are largely determined by the manner in which it is cooked. In the process of cooking, the flavor, the texture, and even the nutritive value, may be either preserved or entirely destroyed. In too many cases the latter result is attained.

The three rules given below, if followed, will keep any one from going very far astray:

1. All dried fruit should be soaked in clear water until the moisture lost in drying has been nearly replaced.
2. Dried fruit should not be boiled.
3. All sugar used should be cooked with the fruit.

In drying, the tissues of the fruit are shrunken, adhering to each other, and certain chemical changes take place, as shown in the change of flavor. Soaking separates again these tissues, and in a measure reforms the juice once contained; and while it can never entirely restore the fresh flavor, because of the chemical changes, with some fruits it comes very near to it.

Boiling hardens some of the tissues, breaks up the fruit, changes not only its flavor, but its digestibility. The temperature should never be raised above 180° Fahr. (a low simmer), at which temperature the fruit will cook entirely tender, and at which it may stand for hours without injury.

The saccharine matter contained in fruit is mostly grape or fruit sugar, which differs from cane sugar in having passed through one step in the process of digestion. Its use is open to none of the objections which physiologists urge against the use of cane sugar. When the sugar is cooked with dried fruit, instead of being put in after cooking, it is all, or nearly all, changed into fruit sugar. This explains the apparent anomaly that well-prepared dried fruit is more easily digested than fresh or canned fruit.

A convenient way to prepare dried fruit is as follows: Rinse it well in warm water, letting it stand in the water five or ten minutes, stirring it well, if the fruit is at all musty or "sugared," to make it entirely clean. Put it now into the cooking vessel—preferable of porcelain—with just enough water to cover it, and let it stand several hours—all night, if you choose—until it has reached almost its original state, so far as moisture is concerned. It is now ready to cook. Put in any needed sugar, a little more water, and set it on the back of the range, where it may simmer for several hours, or until quite tender.

When prunes are cooked in this way they remain whole and the liquor poured off will be clear. The skin will be tender, the pulp uniformly soft and delicious. The "sugaring" above alluded to does not arise, as many suppose, from anything added to the fruit, but is a crystallization of grape sugar on the surface. It is clean and wholesome, but adds little to the flavor.

In the detailed recipes below given, although they are each made for a certain kind of fruit, yet in most of them other fruits may be substituted with equally good results.

The apricot is the most tender-meated of our fruits, and it will be sufficiently cooked if prepared as follows: After soaking drain off all the water,

add to it the amount of sugar required, and boil until the syrup is thick; then pour over the soaked fruit.

Because of their peculiar acid they do not take kindly to cream, which is a great addition to all the other fruits except the sourest plums. When well sweetened they make a good sauce, to be used as a relish without cream.

As a pie fruit they are unsurpassed, many greatly relishing their keen acid. A few apricots mixed with other dried fruits that lack the acid to make them agreeable, add very much to their acceptability.

Dried cherries are mostly used as a sauce, but when prepared as here given make a very acceptable cherry pie. They may also be used widely as blends.

Figs make a delicious sauce, very nutritious and wholesome. Soaked a little while until sufficiently tender and then cut into thin slices, they are excellent in layer cake and make a toothsome addition to fruit cake.

Grapes are important as a food in the form of raisins. They have long been used in cakes, pies and puddings. Many persons also use them to add to the seasoning of the stuffing of fowls—they taking the place of jelly in the eating. The raisin, containing as it does all the nutrition of the grape, is by no means to be despised as a food. Stewed by themselves, or with other fruits as blends, they are a useful article of diet. They may be eaten, as are grapes, in three ways: with both skin and seeds—crushing the seeds, to get the value of the tannin they contain—or by rejecting the seeds, as most prefer them, or both skin and seeds may be rejected, taking only the pulp and juice. Eaten in this way they are a strengthening food particularly suited to convalescents.

Nectarines and peaches may be classed together—both widely used as a sauce, and both used as food. The thick, meaty fruit is hearty and makes a good addition to a milk diet. Well cooked, they are as palatable in bread and milk as was the old fashioned sweet apple. They may be substituted for the prune in the soufflé, or may be used as blends with almost any fruit.

Pears are exceedingly nutritious, and, when well prepared, entirely digestible. Almost too sweet for a sauce alone, they may, when partially cooked, be used as layer cake, or as an addition to the fruit in a fruit cake. With some sour fruit they make good pies, and are one of the best fruits to eat with milk.

Plums have, perhaps, less nutritive value than other dried fruits, yet, because of their decided flavor, they are very useful as a sauce and as blends. "Plum duff" can be made from any of the varieties, and, with a good sauce, makes an acceptable dessert dish.

They may be used for pies or puddings, when a keen acid is desired, and when added to mince pies form a good substitute for the old-fashioned boiled cider.

Pitted plums, soaked an hour or two and then cooked in a heavy sugar syrup, after a slight drying, make a fine confection, retaining the plum flavor almost perfectly.

Prunes are adapted to a greater variety of food dishes than any other of our fruits. Entirely acceptable as a sauce, they make excellent pies and form an agreeable addition to almost all kinds of puddings. They may be used with the pits in or can be easily pitted after cooking.

All the prunes are palatable as a sauce, especially when cooked with a little sugar, which improves the dish by enriching the liquid in which they are cooked. They add very much to any of the batter puddings, and should be placed in the bottom and around the edges of the dish as it is filled with the batter.

Orange Wine.

A writer in the National City Record gives the following formula for making orange wine: Wash the oranges, cut them in halves, and squeeze out the juice; be careful and not get the oil of the rind in; let juice remain in tubs for eight or ten hours until all the

fibrous matter can be skimmed off. If you want a sweet wine, add five pounds of granulated sugar to each gallon of juice. If you want a mild, sour wine add five pounds of sugar to each gallon, and then put one gallon of water to each gallon of juice. Strain the juice into barrels and set them where they can remain undisturbed for three months. In the bung make a hole to fit in a piece of small rubber tubing about a foot long; put the outside end in a vessel of water placed on the barrel; this tube is to allow the gas to escape and will exclude the air and insects. When the juice has ceased to throw off gas, which can be determined by the air bubbles coming up from end of tubing, you can bung it up tight and let it remain for a few months, then draw off into bottles and keep in a cool place. Any person can make strawberry, currant and rhubarb wine in this way in a gallon jug.

Domestic Hints.

PRUNE SOUFFLE.—Take a quart of prunes, the Robe de Sergeant or the Silver prune preferably, cook, sweeten to taste, remove pits and chop fine. Beat six eggs, yolks and whites separately, and pour over the chopped prunes. Bake fifteen minutes in quick oven. Serve hot.

LEG OF MUTTON.—This requires one and one-half hours in a good oven. If the potatoes are baked under the meat they should be in readiness and put into the pan as soon as all are well heated, and then basted with the liquor, and so they will cook without need of watching.

BOILED FISH.—Half an hour would be sufficient to cook most fish, provided the water is hot and ready seasoned. Fish, to be perfect, should be taken to the table the instant it is cooked. Sauces should be made ten minutes beforehand. It does not injure any flour sauce to simmer slowly until wanted; that is, if it made of a proper consistency.

A SAVORY MORSEL.—Cut the lean with the bone from a small loin chop; dip it into heated butter, then dust it lightly with pepper; set it upon a grid-iron over a clear fire, and turn often; when cooked place upon a hot plate; carve it with a mite of butter, and sprinkle it sparingly with salt; pop on a sprig of parsley, and send to table quickly with pieces of bread cut into finger lengths.

TAPIOCA PUDDING.—Put a teaspoonful of tapioca into a pint pie dish, with one tablespoonful of sugar, then pour into and stir well a pint of new milk; grate over the top a little nutmeg; set into a slow oven for four hours; the last hour the heat must be greater than before. If the pudding is properly cooked, it should eat like a good, thick cream, and be most delicious, and also very nourishing, both to the invalid and the nursery.

POTATO PIE.—Parboil a pound of potatoes, skin, and cut into slices; season them with pepper and salt; put a layer in a dish, then one of meat, chopped small with a knife; over these lay sliced onions which have been fried a little. When the dish is full, lid the pie with nicely mashed potatoes, in which has been mixed butter, cream, pepper and salt. Carve the top over with a knife. Set in a good steady oven. Have ready a gill of good gravy. When the first slice is cut from the pie, pour in the gravy. If this is properly arranged it is delicious.

BELGIAN HARE SOUP.—Take a hare, and cut into pieces, and put it into an earthen jar with two onions, cut small, three blades of mace, a pinch of salt, two anchovies and three quarts of water. Bake in a quick oven for three hours, then strain the liquor into a stewpan. Have ready boiled four ounces of fine pearl barley. Scald the liver, and rub it through a sieve with a wooden spoon; put this into the soup; set over the fire, and keep it stirring until nearly boiling, but it must not boil. Then remove. Put some toasted bread into the tureen, and pour the soup over. Serve hot.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, April 18, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	68 @67½	69½ @68½
Thursday.....	66½ @66¼	68½ @67½
Friday.....	*—@—	@—
Saturday.....	66 @66½	67½ @67½
Monday.....	66½ @66½	67½ @68½
Tuesday.....	66½ @66½	67½ @67½

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday.....	5s 10½d	5s 10½d
Thursday.....	5s 10½d	5s 10½d
Friday.....	*—@—	@—
Saturday.....	*—@—	@—
Monday.....	*—@—	@—
Tuesday.....	5s 10½d	5s 10½d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	96½ @ 96½	1 04½ @ 1 04½
Friday.....	*—@—	@—
Saturday.....	96½ @ 96½	1 04½ @ 1 04½
Monday.....	96½ @ 96½	1 04½ @ 1 04½
Tuesday.....	96½ @ 96½	1 04½ @ 1 03½
Wednesday.....	95½ @ 95½	1 03½ @ 1 03½

*Holiday.

WHEAT.

The wheat market has been dragging along in much the same unsatisfactory shape as for many weeks preceding. There has been no appreciable change since last review, either in the matter of movement or in quotable rates. There is a little better supply of ships, two being now on the disengaged list, and three arriving this week under charter. Although the number is still small, it is certainly an improvement on the state of affairs in this regard a few weeks ago, when there was not a ship in the harbor open to engagement. Lower ocean freight rates are probable in the near future, which will likely inure to the benefit of wheat here, especially if the grain markets abroad do not recede, or still better, if there should be any hardening in values in foreign centers. The prospect for the latter, however, is not very bright. A material increase is expected next week in the amount of wheat and flour on passage to United Kingdom and the Continent. On the other hand, Chile is reported short of wheat and there is said to have been serious damage to part of Russia's crop. Two cargoes cleared from this port during the week, making six so far for the current month. Visible supply in United States east of the Rockies, 53,237,000 bushels; decrease for week, 139,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 96½ @ 95½.
December, 1900, delivery, \$1.04½ @ 1.03½.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at 95½ @ 95½; December, 1900, \$1.03½ @ 1.03½.

California Milling..... 97½ @ 1 02½
Cal. No. 1 shipping, alongside..... 96½ @ 98½
Oregon Valley..... 95 @ 1 00
Walla Walla Blue Stem..... 95 @ 1 02½
Walla Walla Club..... 85 @ 1 00
Of qualities wheat..... 82½ @ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	6s3d @ 6s5d	6s5d @ 6s5½d
Freight rates.....	25 @—s	40 @—s
Local market.....	\$1 05 @ 1 07½	96½ @ \$1.00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Business on local account is of light volume and at generally unchanged figures, the market displaying the same lack of firmness as previously noted. The outward movement is of fair average proportions, but is largely of contract flour. Supplies of other than common superfines are more than sufficient for immediate needs.

Superfine, lower grades.....	\$2 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

There is no activity to note in the market for this cereal and not likely to be any very brisk movement experienced during the balance of the season. While the market is by no means firm, values are no lower than lately and have seem-

ingly touched bedrock. Speculative operators do not care to sell short at these figures, neither do they care to buy to any great extent or go long on Call Board contracts, believing the prospects are poor for the market either stiffening or weakening very much for some months to come.

Feed, No. 1 to choice.....	72½ @ 75
Feed, fair to good.....	67½ @ 72½
Brewing, No. 1 to choice.....	85 @ 95
Chevalier, No. 1 to choice.....	@—
Chevalier, No. 2.....	@—

OATS.

Values are ruling steady, which is mere owing to absence of undue selling pressure than to noteworthy demand at full current rates. Spot stecks are of fairly liberal volume, and are largely of medium grades of Whites and Grays, for which the market shows the least firmness. Cheap colored oats have received the bulk of attention from the large class of buyers who look mainly to price, and want all the value possible for their money.

White Oats, fancy feed.....	1 25 @—
White, good to choice.....	1 12½ @ 1 20
White, poor to fair.....	1 05 @ 1 10
Gray, common to choice.....	1 07½ @ 1 15
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	90 @ 1 02½
Red.....	95 @ 1 17½

CORN.

There is not much imported corn now arriving, as values East have been lately above the parity of prices in this center for Large Yellow or White. Domestic product has been in fair receipt, but offerings have not included much desirable Large Yellow, which continues to find a comparatively stiff market. White is in very fair supply. Small Yellow is in few hands and stiffly held.

Large White, good to choice.....	1 05 @ 1 07½
Large Yellow.....	1 17½ @ 1 20
Small Yellow.....	1 50 @ 1 60
Eastern, in bulk (carload lots).....	1 10 @ 1 12½

RYE.

Nothing has taken place to warrant changing quotations. While there is little offering, the demand is also slow.

Good to choice, new.....	95 @ 1 00
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BUCKWHEAT.

There is none coming forward and very little in stock. Values are not well defined. Quotations are based on latest reported transactions.

Good to choice.....	2 00 @ 2 10
Silverskin.....	@—

BEANS.

Conditions have not changed materially since last review. There are not many beans of any sort now offering from producers, and stocks in the hands of jobbers are of quite moderate volume. The market is, rather quiet, owing to the limited supplies and the generally firm views entertained by holders. Prospects are that all the beans now in stock will be required before the close of the season. Free sales could now be effected, if holders were desirous of unloading and would modify their views slightly in favor of buyers.

Pea, fair to good, 100 lbs.....	3 35 @ 3 50
Small White, good to choice.....	3 35 @ 3 50
Lady Washington.....	3 15 @ 3 25
Butter, small.....	3 75 @ 4 00
Butter, large.....	@—
Pinks.....	2 65 @ 2 85
Bayos, good to choice.....	3 15 @ 3 35
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 25 @—
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	@—
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

Advises by recent mail from New York City give the following report of the bean market, prices quoted being per 60-lb. bushel:

Domestic receipts have been unusually light this week, but the quietness of trade has prevented any material change in values—some varieties have gained a little in firmness and others have shown weakness. Foreign beans have supplied a large part of the trade for some time past, and this has been the cause of the dullness in State goods. Marrow have not sold any better this week, but a shortening up of the offerings has led to a more confident holding with strictly choice lots now jobbing at \$2.20, and good average quality at \$2.17½. An exporter filled an order early in the week at the latter price, and some good foreign Marrow were taken by a shipper at about \$1.70 in bond. Medium have ruled quiet at \$2.15, but supplies are moderate and there is now a disposition to ask 2½c more. Not many Pea have been wanted, but so little stock offering that they have cleaned up closely at \$2.17½, and at the close a few have jobbed at \$2.20. Red Kidney settled to \$2.10, and a few export orders have been filled at that. White Kidney greatly neglected and quotations represent merely asking rates. Turtle Soup also very dull, and there is but little inquiry for Yellow Eye. California Lima steady at \$3.55, and the best of the Giants move fairly at \$2.85.

Foreign beans are working out reasonably well; there is a wide range in quality and our quotations are based upon good to choice grades. Inferior lots have no certain value. The Government has just placed another order for 570,000 lbs.—about 2600 bags—to be shipped to Puerto Rico. Green and Scotch peas have had slow sale.

DRIED PEAS.

Little or nothing doing in this article and not likely to be until next crop begins to come forward. Prices in the meantime must remain largely nominal.

Green Peas, California.....	2 20 @ 2 35
Niles Peas.....	2 00 @ 2 25

WOOL.

One or two buyers have begun looking around in the local market on Eastern account, being the first indications of the season of any attempts to purchase in this center. Markets East show improved condition, as compared with reports from there a few weeks ago. That there will be some noteworthy trading in this market at a very early date is altogether probable, and at figures close to the quotations below named, which are based mainly on the views of sellers.

SPRING.

Humboldt and Mendocino.....	20 @ 23
Northern, free.....	16 @ 18
Northern, defective.....	13 @ 16
Middle Counties, free.....	15 @ 17
Middle Counties, defective.....	13 @ 15
Sout ern Mountain, 12 mos.....	12 @ 14
Southern Mountain, free, 7 mos.....	12 @ 15
Southern Mountain, defective, 7 mos.....	10 @ 12
Nevada, as to condition.....	16 @ 18

HOPS.

Inactivity continues to be experienced in the hop market in this center. Spot offerings are not heavy, and are mostly ordinary qualities, for which there is an entire lack of demand. The little inquiry now existing in the wholesale market is almost wholly for strictly fancy hops, which are not obtainable at present and have been scarce throughout the season. There is nothing to warrant making any changes in quotations.

Good to choice, 1899 crop.....	6 @ 9
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The following review of the hop market, coming through by recent mail, is from a New York authority:

The local market for hops has continued very quiet, but holders have felt no anxiety about the soundness of the position, and there has been no effort to push business except at full prices. The deliveries to brewers go on steadily, but new purchases are not often reported, and the buying by dealers is simply to keep their stocks from too great depletion at this season of year. No one apparently is desirous of carrying heavy supplies, but all want enough stock to trade on even though the quality is subject to the most severe criticism. Some lots are still going abroad, mostly on direct consignment from the Pacific coast. There is every reason to believe that the shipments to England would be double what they are now if we had fine quality to send; as it is, the hops that go abroad come in competition with the remnants of a poor English crop. Prices here are steady and unchanged. Some buying is reported in the interior of this State, and more would be purchased if growers were willing to sell. Nothing has been done in the yards as yet. Advices from Oregon report present stocks in growers' hands about 17,000 bales.

HAY AND STRAW.

Although hay receipts have been lately showing some decrease, the arrivals of most descriptions are ample for the immediate demand and values fail to develop improvement. Strictly select wheat hay is not plentiful and in a small way sells above quotations. This is the only kind for which the market shows the slightest tendency in favor of the seller. Straw is quotably unchanged, but market lacks firmness.

Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 00 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 00 @ 7 00
Stock.....	4 50 @ 5 50
Compressed.....	6 50 @ 9 50
Straw, ½ bale.....	30 @ 40

MILLSTUFFS.

Bran was not in heavy supply, but with immediate requirements of a light order, the market remains weak. Middlings and Shorts continued to be held at about same figures as last quoted, with movement light. Rolled Barley was in fair request at the quoted values. Milled Corn was quite firmly held.

Bran, ½ ton.....	11 50 @ 12 50
Middlings.....	15 00 @ 18 00
Shorts, Oregon.....	13 00 @ 15 00
Barley, Rolled.....	16 00 @ 16 50
Cornmeal.....	24 50 @ 25 00
Cracked Corn.....	25 00 @ 26 00

SEEDS.

Business in seeds quoted herewith is dull, this being almost invariably a quiet

period in the seed trade. Supplies of most kinds are of decidedly small compass. Quotable values remain nominally as previously noted.

Mustard, Trieste.....	3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25
Canary.....	3½ @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4½
Timothy.....	4 @ 4½
Alfalfa, Utah.....	9 @ 10

BAGS AND BAGGING.

Market for Grain Bags is very quiet, with asking figures of wholesale dealers and importers the same as previously noted. There are no efforts, however, so far as observable, to crowd business. It would seem from surface indications as though this was a good time to purchase for forward delivery, but the future of the bag market is ever a very uncertain quantity, and the unexpected frequently happens.

Calcutta Grain Bags, buyer June-July.....	6¼ @—
Calcutta Grain Bags, spot.....	6¼ @—
San Francisco Grain Bags, 2x36, spot.....	6¼ @—
State Prison Bags, 7 100.....	5 65 @—
Wool Sacks, 4 lbs.....	@ 33½
Wool Sacks, 3½ lbs.....	@ 28½
Fleece Twine.....	7½ @—
Gunnies.....	@ 12½
Bean Bags.....	4½ @ 5
Fruit Sacks, cotton.....	6¼ @ 7¼

HIDES, PELTS AND TALLOW.

While there is a little firmer tone to the market for desirable Hides, and slightly better prices than lately current are expected to be soon realized, no radical improvement in actual values has yet developed. Offerings of Tallow commanded as a rule full current rates, with demand very fair.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10	9
Medium Steers, 48 to 56 lbs.....	9½	8½
Light Steers, under 48 lbs.....	9¼	8¼
Heavy Cow Hides, over 50 lbs.....	9½	8½
Light Cow Hides, under 50 lbs.....	9¼	8¼
Wet Salted Kip.....	9	8
Wet Salted Veal.....	9	8
Wet Salted Calf.....	10	9
Dry Hides.....	18	15
Dry Kip and Veal, 11 to 16 lbs.....	17	13
Dry Calf, under 4 lbs.....	20	16
Salted Horse Hides, large.....	2 50 @—	@—
Salted Horse Hides, medium.....	2 00 @—	@—
Salted Horse Hides, small.....	1 00 @—	@—
Dry Horse Hides, large.....	2 00 @—	@—
Dry Horse Hides, small.....	75 @ 1 00	@ 1 00
Dry Colts' Hides.....	50 @ 75	@ 75
Pelts, long wool, ½ skin.....	1 00 @ 1 25	@ 1 25
Pelts, medium, ½ skin.....	70 @ 90	@ 90
Pelts, short wool, ½ skin.....	35 @ 60	@ 60
Pelts, shealing, ½ skin.....	20 @ 30	@ 30
Deer Skins, best summer.....	27½ @ 30	@ 30
Deer Skins, good medium.....	20 @ 22½	@ 22½
Deer Skins, thin winter.....	— @ 10	@ 10
Elk Hides.....	10 @ 12	@ 12
Tallow, good quality.....	5 @ 5½	@ 5½
Tallow, No. 2.....	4½ @ 4¾	@ 4¾
Goat Skins, perfect.....	30 @ 37½	@ 37½
Goat Skins, damaged.....	10 @ 20	@ 20
Kid Skins.....	5 @ 10	@ 10

HONEY.

Market is nearly bare of last year's product, and no new honey has yet arrived, although there are advices to the effect that new will very soon be forwarded. Quotations are based on latest transactions in old honey. Values for new remain to be determined.

Extracted, White Liquid.....	7½ @ 8
Extracted, Light Amber.....	7 @ 7½
Extracted, Amber.....	5 @ 5½
White Comb, 1 lb frames.....	11½ @ 12½
Amber Comb.....	8 @ 10

BEESWAX.

Nothing of consequence doing in this line, nor will there be until new or 1900 product begins to come forward. In the absence of any transactions, previous quotations are continued as representing nominal values.

Good to choice, light, ½ lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Owing to the close of the Lenten season, there was an improved demand for Beef and Pork, and a firmer market, but no special improvement in prices of Beef. Veal and Lamb were in moderate request, Veal ruling lower and Lamb slightly higher. Hog market was firm, with a prompt demand for all desirable offerings, and likely to so continue for some time.

Beef, first quality, dressed, net ½ lb.....	6¼ @ 7
Beef, second quality.....	6¼ @ 7
Beef, third quality.....	5¼ @ 6
Mutton—ewes, 6½ @ 7c; wethers.....	6½ @ 7½
Hogs, hard grain fed, medium.....	5½ @ 6
Hogs, small, fat.....	5½ @ 6
Hogs, large, hard.....	5¼ @ 5½
Hogs, acorn-fed.....	@—
Hogs, feeders.....	5 @ 5½
Hogs, country dressed.....	6 @ 6½
Veal, small, ½ lb.....	7 @ 9
Veal, large, ½ lb.....	7 @ 8
Lamb, spring, ½ lb.....	8½ @ 9

POULTRY.

Turkeys, dressed, # lb.	— @ —
Turkeys, live hens, # lb.	13 @ 14
Turkeys, live gobblers, # lb.	12 @ 13
Hens, California, # dozen.	4 00 @ 5 00
Roosters, old.	4 00 @ 4 25
Roosters, young (full-grown).	6 00 @ 7 00
Fryers.	5 50 @ 6 00
Broilers, large.	4 00 @ 5 00
Broilers, small.	2 50 @ 3 50
Ducks, old, # dozen.	4 50 @ 5 00
Ducks, young, # dozen.	5 50 @ 7 50
Geese, # pair.	1 75 @ 2 00
Goslings, # pair.	2 25 @ 2 50
Pigeons, old, # dozen.	1 75 @ 2 00
Pigeons, young.	1 75 @ 2 00

BUTTER.

In the matter of quotable values, the market is about the same as last noted. There is considerable packing being done, both here and in the interior, which is absorbing all the surplus of desirable quality. Indications are that prices for good to choice butter have touched bedrock for the season.

Creamery, extras, # lb.	17 1/2 @ —
Creamery, firsts.	17 @ —
Creamery, seconds.	16 @ —
Dairy, select.	16 @ 16 1/2
Dairy, seconds.	15 @ 15 1/2
Dairy, soft and weedy.	— @ —
Mixed store.	14 @ —
Creamery in tubs.	18 @ —
Creamery Roll.	— @ —
Firkin, California, choice to select.	18 @ 19
Firkin, common to fair.	16 @ 17

CHEESE.

New product continues in liberal supply and is being offered at fully as low figures as have been lately current. The range in values for new is narrow, however, most of the offerings showing little difference in quality. Well seasoned cheese is scarce and high. Choice Eastern cheddars are commanding in this market 17@17c.

California, fancy flat, new.	8 @ —
California, good to choice.	7 1/2 @ —
California, fair to good.	7 @ —
California Cheddar.	— @ —
California, "Young Americas".	7 1/2 @ 9

EGGS.

The market was a little easier than previous week, the demand for immediate use being less active and packers not caring to pay full figures lately current. Offerings of Eastern also operated slightly against sale of domestic product. Values for strictly select fresh, however, are more apt to harden than to materially recede in the near future.

California, select, large, white and fresh.	16 @ —
California, select, irregular color & size.	15 @ 15 1/2
California, good to choice store.	14 @ 14 1/2
Eastern, as to section and grading.	14 @ 16
Eastern, cold storage.	— @ —

VEGETABLES.

Onions continue scarce and are bringing fancy figures. New Red are beginning to put in an appearance in a small way, but the quality of first arrivals is naturally quite ordinary. In the market for spring vegetables there were few changes in rates, about the only noteworthy feature being the free receipt of Peas, enabling canners to begin operations.

Asparagus, # box.	1 00 @ 2 25
Beans, String, # lb.	8 @ 10
Cabbage, choice garden, # 100.	40 @ —
Cauliflower, # dozen.	50 @ —
Cucumbers, botbouse, # doz.	50 @ 1 00
Egg Plant, # lb.	6 @ 8
Garlic, # lb.	3 @ 5
Onions, Yellow, Cal., good to choice.	— @ —
Onions, Oregon, # cental.	5 50 @ 7 00
Peas, Sweet, garden, # lb.	2 1/2 @ 3
Peas, Green, # sack	75 @ 1 25
Peppers, Green Chile, # lb.	10 @ 15
Peppers, Bell, # lb.	— @ —
Rhubarb, # box.	60 @ 1 15
Squash, Summer, # box.	1 00 @ 1 25
Tomatoes, Southern, # box.	1 25 @ 1 75
Tomatoes, Bay, # box.	— @ —

POTATOES.

The market was weak and irregular for old potatoes, with tolerably heavy offerings for this late date, especially of Oregon Burbanks. Consignees were anxious as a rule to make speedy sales and effect a clean-up, having no faith in the future of the market. There were few buyers who cared to operate beyond immediate needs. New potatoes were in slightly increased receipt and the quality showed improvement.

Burbanks, River, # cental.	40 @ 75
Burbanks, Bay counties, # cental.	40 @ 80
Burbanks, Humholdt.	60 @ 80
Burbanks, Oregon.	50 @ 90
River Reds.	75 @ 85
Early Rose.	75 @ 85
Garnet Chille.	80 @ 90
New Potatoes, # cental.	1 25 @ 1 75
Sweet, River, # cental.	— @ —
Sweet, Merced.	— @ —

The Fruit Market.

FRESH FRUITS.

Cherries appeared on market this week, mainly from Vacaville section. Only small quantities were received, and it was the exception where the quality was strictly choice, as is generally the case with first consignments. Sales of fairly ripe and well colored cherries were mainly within

range of \$1.50@2.00 per drawer. Blackberries were in light receipt, selling mostly at 15c per basket. Strawberries were in increased supply, causing market to rule weak and lower. There were a few Raspberries from San Leandro, but not in sufficient quantity to quote. Apples of last crop are still offering, with asking rates not appreciably changed, but demand is slow, as is to be expected at this late date.

Apples, fancy, 4-tier box.	1 75 @ 2 25
Apples, good to choice, # 50-lb box.	1 50 @ 1 75
Apples, common to fair, # 50-lb box.	75 @ 1 25
Cherries, # box.	1 60 @ 2 00
Strawberries, Longworth, # chest.	7 00 @ 10 00
Strawberries, Large, # chest.	4 00 @ 6 00

DRIED FRUITS.

In the market for cured and evaporated fruits, trade continues of a light order, there being little movement in other than Prunes. Stocks of the latter, although showing steady reduction, would admit of considerably more activity than is being experienced. Business in Prunes is principally on European account, Germany having been lately the leading buyer, with England coming in as a tolerably strong second. In the Eastern States stocks of this fruit are reported fairly liberal, including some of the crop of 1898. Small Prunes are too scarce here to be quotable, but they are obtainable on the Atlantic side below the parity of values current here and in sufficient quantity to admit of being quoted. While there is a better tone to the market for Prunes than for any other fruit, there is no quotable improvement to record in prices. Apples are dragging and market is quotably lower for both evaporated and ordinary sun-dried, the cut being fully half a cent per lb.; stocks are tolerably large for this advanced date. Peaches incline against the selling interest, although quotations are unaltered. Stocks crowded to sale, however, would have to go at materially lower figures. The same remark applies with equal force to Figs, which are still in quite liberal stock in second hands and are moving very slowly. Apricots, Plums and Pears are not offering in heavy quantity, but there are more than enough of these for immediate requirements, and probably more than will be called for during the balance of the season; there will certainly be no shortage if the present state of trade indicates what may be expected during the brief period now remaining before new crop will be upon the market.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb.	10 1/2 @ 12
Apricots, Royal, fancy.	12 1/2 @ 13
Apricots, Moorpark.	13 @ 15
Apples, in 50-lb boxes, rings, pressed, fancy.	7 @ —
Apples, 50-lb boxes, rings, pressed, good to choice.	5 @ 6
Figs, White, fancy pressed.	5 1/2 @ 6 1/2
Peaches, unpeeled, good to choice.	5 @ 6
Peaches, unpeeled, fancy.	7 @ 7 1/2
Peaches, peeled, in boxes.	12 1/2 @ 15
Pears, unpeeled Bartlett's, halved, fancy.	9 @ 9 1/2
Pears, halved, unpeeled Bartlett's.	8 1/2 @ 7 1/2
Pears, quartered, unpeeled Bartlett's.	8 1/2 @ 7 1/2
Plums, Black, pitted.	6 1/2 @ 7 1/2
Plums, White and Red.	7 @ 8
Prunes, in sacks 40-50s.	3 1/2 @ 4
50-60s.	3 1/4 @ 3 1/2
60-70s.	3 1/4 @ 3 1/2
70-80s.	3 @ 3 1/4
Prunes in boxes, 1/2c higher for 25-lb boxes, 1/2c higher for 50-lb boxes.	— @ —
4 sizes Santa Claras and equal.	— @ —
4 sizes San Joaquin and Northern.	— @ —
Prunes, Silver.	4 @ 6

COMMON SUN-DRIED.

Apples, sliced.	3 1/2 @ 4 1/2
Apples, quartered.	3 1/2 @ 4 1/2
Figs, Black.	— @ 3
Figs, White.	3 @ 3 1/2
Peaches, unpeeled.	5 @ 6

Mail advices of recent date from New York City furnish the following report of the dried fruit market:

Evaporated apples have continued quiet and without material change; prime have sold mainly at 5 1/2@5 3/4c, rarely higher in a jobbing way, with choice jobbing from 6@6 1/2c and fancy 7@8c and some extra fancy a fraction higher. The high prices on sun-dried apples have caused exporters to turn to low-grade evaporated and a considerable quantity of stock has been moved at 5@5 1/2c, quality grading just under prime, with some poorer lots ranging down to 3 1/2@4 1/2c. Sun-dried receiving very little attention, though really fancy sliced and also State and Western quarters are held up to 5c. Choice heavy packed chops are firm at \$1.40@1.50, rarely \$1.55, but anything unattractive moves slowly. Cores and skins held steady at 90c@\$1 when in prime condition, but poor range lower, bags or very inferior in instances down to 50@75c. Blackberries about cleaned up and nominal. No huckleberries offering. Raspberries receiving a fair inquiry. California fruit held about the same, but demand is light.

Apricots, Cal., Moorpark, 1899, # lb.	15 @ 18
Apricots, Cal., Royal, 1899, # lb.	12 1/2 @ 13 1/2
Peaches, Cal., 1899, peeled, # lb.	16 @ 20
Peaches, Cal., 1899, unpeeled, in bxs, # lb.	8 @ 9
Peaches, Cal., 1899, unpeeled, in bags, # lb.	7 1/2 @ 9
Prunes, Cal., 1899, # lb.	3 1/2 @ 7

RAISINS.

There is no change observable in the general condition of this market. Official rates of the Growers' Association remain as before, but they are largely nominal at this date. Jobbers in some instances are cutting prices, being desirous of promptly closing out their present holdings. Early estimates of the coming crop have been materially reduced in consequence of damage by recent frosts.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, # box.	1 60 @ —
do do 2-crown, # box.	1 50 @ —
Valencia Layers, # 20-lb box.	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.	6 1/4 @ —
Loose Muscatel, seedless.	5 @ —

Pacifics.—2-crown loose Muscatel, 5 1/4c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c. Orientals.—2-crown loose Muscatel, 4 1/4c; 3-crown, 5 1/4c; 4-crown, 6c.

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, # lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, # lb., 8 1/4c; choice, 7 1/4c; standard, 6 1/4c; prime, 5c. Unbleached, 5c.

Loose Valencia.—Fancy, # lb., 5 1/4c; choice, 4 1/4c; standard, 3 1/4c.

Valencia Clusters.—Fancy, # lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUIT.

There were comparatively heavy arrivals of Oranges the past week, about fifteen carloads arriving Monday, causing the market to weaken. Some of this fruit intended for the East was diverted here, owing to an unfavorable market on the Atlantic side. There was in this center a quotable decline on choice Navels of about 50c per box. Lemons were offered at same rates current for several weeks past, with the inquiry rather light and the market easy in tone, especially for other than most select qualities. Limes were in sufficient supply for the demand, which was not active, and prices remained unchanged.

Oranges—Navels, fancy # box.	2 50 @ 3 00
Navels, good to choice.	2 25 @ 2 50
Navels, common to fair.	2 00 @ 2 25
California Seedlings.	1 00 @ 2 00
Lemons—California, select, # box.	2 25 @ 2 50
California, good to choice.	1 50 @ 2 00
California common to fair.	1 00 @ 1 25
Limes—Mexican, # box.	4 50 @ 5 00
California, small box.	50 @ 1 00

NUTS.

Little doing in this line. Almonds are not offered very freely, mainly owing to prospects of a light European crop, but are not quotably higher. While there has been some damage by frost in this State, the crop bids fair to be much larger than last. Prospects are the Walnut crop will be an improvement on that of last season. Choice Walnuts are now practically out of stock and poor grades are neglected. Peanut market is ruling decidedly steady, with few offering, either imported or domestic.

California Almonds, shelled.	14 @ 17
California Almonds, paper shell, # lb.	10 @ 12
California Almonds, soft shell.	8 @ 9
California Almonds, hard shell.	4 @ 5
Walnuts, White, soft shell.	9 @ 10
Walnuts, White, California, standard.	7 @ 8
Chestnuts, California Italian.	8 @ 10
Peanuts, California, fair to prime.	5 @ 6
Peanuts, Eastern, hand-picked.	6 @ 6 1/2
Pine Nuts.	5 @ 6

WINE.

Although there have been reports of considerable damage by frost to vineyards in some parts of the State, there are as yet no evidences of wine dealers having materially raised their bids in consequence. More firmness may be developed later on, but advanced quotations are not warranted at this date. Dealers are holding off, claiming that they have enough wine for the time being, and it is only when especially desirable lots are presented for sale, or decidedly low figures prove acceptable, that they care to operate. The quotable range remains as before, 14@20c per gallon, as to quantity and quality, for dry wines of 1899, San Francisco delivery. Extreme quotation is based on views of holders of very select stock.

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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/2 sacks.	124,560	5,095,659
Wheat, centals.	158,257	5,560,607
Barley, centals.	19,710	4,007,194
Oats, centals.	14,145	679,703
Corn, centals.	4,000	115,815
Rye, centals.	300	92,207
Beans, sacks.	2,434	343,175
Potatoes, sacks.	19,180	1,063,007
Onions, sacks.	337	140,104
Hay, tons.	2,183	131,686
Wool, bales.	2,880	43,875
Hops, bales.	150	9,595

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/2 sacks.	86,500	3,453,702
Wheat, centals.	64,658	4,897,289
Barley, centals.	3,717	3,656,621
Oats, centals.	1,313	39,301
Corn, centals.	672	16,989
Beans, sacks.	573	23,594
Hay, bales.	1,807	111,548
Wool, pounds.	—	4,324,433
Hops, pounds.	7,894	985,047
Honey, cases.	15	3,437
Potatoes, packages.	1,237	67,333

California Dried Fruit at New York.

NEW YORK, April 18.—Evaporated apples, common, 4 1/4@5c; prime wire tray, 5 1/2@6c; choice, 7 1/4@7 1/2c; fancy, 7 1/2@8 1/2c. California dried fruits dull at generally unchanged figures. Prunes, 3 1/2@6c. Apricots, Royal, 13@15c; Moorpark, 15@18c. Peaches, unpeeled, 7 1/2@9c; peeled, 18@22c.

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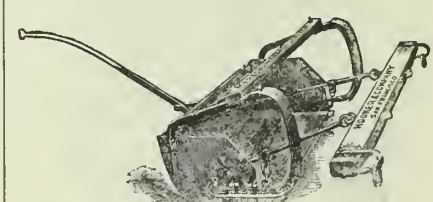
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Origin of the Telephone.

Prof. A. M. Bell, hale and hearty at eighty-two years of age, writes from his residence in Washington, D. C., as to the incitements which led his son to the invention of the telephone:

"In the boyhood of my three sons I took them to see the speaking machine of Herr Faber, and we were all greatly interested in it professionally. To test their theoretical knowledge, and their mechanical ingenuity, I offered a prize to the one who should produce the best results in imitation of speech by mechanical means. All, of course, set to work, but nothing of startling novelty was devised. The scheme of my second son, A. G. Bell, was, however, the best.

This contest—as well as the whole course of the boys' education—directed their minds to the subject, until the sole survivor of the lads came to the conclusion that imitative mechanism might be dispensed with, and merely the vibrations of speech be transmitted to an electric wire. This was entirely his own idea. He illustrated it to me by diagrams, and sketched out the whole plan of central office communication, long before anything had been done for the practical realization of the idea. I can claim nothing in the telephone but the impulse which led to it."

The Chinese and the Telephone.

In circumstances where the telegraph is debarred from the direct conveyance of word symbols the telephone enters with peculiar value. Until Prof. Bell perfected this invention a Chinese was denied by the structure of his language any immediate transmission of it by electricity. Chinese has no alphabet, and its written signs are so numerous and intricate as to defy reduction to a simple telegraphic code. Two methods proffered themselves—first, to translate a Chinese message into an alphabetical tongue, telegraph this, and at the receiving station run the risk of error in retranslating into Chinese, or, in the original Morse method, giving a number to each word in a dictionary, and telegraphing numerals, to be matched as received with their appropriate signification.

With the telephone all this hazard and trouble vanish at once. A Chinaman speaks his message; it is received exactly as spoken, either by his correspondent or his correspondent's scribe. Louis Glass of the Pacific Telephone & Telegraph Co., San Francisco, states that his company has a substation in San Francisco, employing three Chinese attendants. "Their ejaculatory language gives peculiarly good telephonic results. The Chinese do a very large long-distance business throughout the whole Pacific coast, and apparently with more satisfactory results than English-speaking subscribers."

Miscellaneous.

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SNOWSHOES on horses are not unknown in California, being occasionally used in Plumas and Sierra counties.

IN silver halves, quarters and dimes \$1000, U. S., weighs 803.75 ounces; in standard silver dollars \$1000, U. S., weigh 859.375 ounces.

A PARTNER is not liable for the price of goods sold to his copartner over his protest and after notice that he would not be bound for same.

IT is the as yet unrealized hope of scientists to generate electricity direct from coal. It is not to be considered impossible. It can not, however, be assumed that any

method may be devised of consuming zinc to compete with coal in the indirect production of electrical energy.

WHERE water on public land, subject to appropriation, flows in a stream, any one may appropriate any of the flow not already appropriated; but no one so appropriating it can legally diminish or interfere with the full supply of a prior appropriator.

THE water storage required to produce 1 H. P. for one hour, with an available head of 10 feet, would be represented by the capacity of a tank 20 feet square and 10 feet deep; at a head of 140 feet the storage tank would still be required to be 10 feet square and about 3 feet deep.

THE best practical education is that which makes intelligent labor most financially productive. Life being short, it were better to be a specialist than an "all-round" man, for now-a-days the man who "can do most anything" can do no one thing well, and is not in demand.

QUANTITY and pressure or their equivalents are the prime factors or makers of all forms of energy. If water is to exert power, one is always first concerned about the head of pressure and the volume at his disposal, for if he had a head equal to 1,000 feet, but only a supply of one gallon per hour, at this enormous pressure and small quantity the power would be no greater than when the volume was 1,000 gallons an hour with a pressure of 1 foot of head. In the same way if steam is supplied at a pressure of 300 pounds on the square inch, with a volume of only 1 cubic foot per minute, it is manifest that the power at one's disposal is here also small. On the other hand if 1,000 cubic feet of steam per minute are available at a pressure of 300 pounds on the square inch, then the power is great. What is true of water, steam and air and all other mediums of transmitted energy is equally true of transmitted energy through metals, as in the case of electricity, for in it volts constitute the factor of pressure, and amperes constitute that of volume.

THE rain falling on the rocks sinks into every crack and crevice, carrying with it into these fissures surface material which has been degraded by the weather, and thus affording a matrix sufficient to start the growth of vegetation, and afterward to maintain the plants. The fibers and roots of these plants, bushes, and trees thus brought into life, growing and expanding, act as wedges to split up the surface of the rock and to commence the process of wearing away. From this quality of destruction a large class of plants derive the name of Saxifragas, or rock breakers, from their roots penetrating into the minute fissures in search of water, and so assisting in the process of disintegration. In winter the water collected in the hollows and crevices becomes frozen, and expanding as it changes into ice, acts like a charge of blasting material in breaking up the rocks. The pieces thus detached become further disintegrated by frost and weather, and, being rolled over and over and rubbed against each other as they are carried away down the mountain currents, are ground gradually smaller and smaller, till from fragments of rocks they become boulders, then pebbles, and finally sand. As the mountain stream morges into the river the pebbles and coarse sand continue to be rolled along the bottom of the channel, while the argillaceous particles and salts become mingled with the water, and flow on with it either in suspension or solution.

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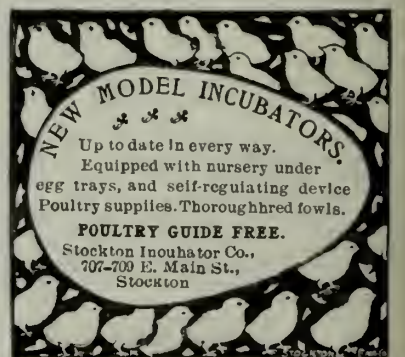
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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING APRIL 3, 1900.

- 646,532.—GOLD DREDGE—S. Babare, Tacoma, Wash.
646,567.—TIRE HEATER—E. Beeson, Fresno, Cal.
646,797.—PISTON PACKING—M. E. Briggs, Alameda, Cal.
646,811.—TACK PULLER—J. H. Driller, Los Angeles, Cal.
646,522.—CAR VENTILATOR—G. A. & R. F. Dunn, Dinuba, Cal.
646,523.—SPRAYING APPARATUS—G. A. & R. F. Dunn, Dinuba, Cal.
646,640.—LIFT PUMP—G. H. Evans, Oroville, Cal.
646,822.—FEED BOX—F. Galloway, Central Point, Or.
646,538.—WELL AUGER—J. Hahn, Colgrove, Cal.
646,734.—CONDIMENT HOLDER—M. L. Hansen, Oakland, Cal.
646,432.—ADVERTISING DEVICE—Heiron & Toffelmeier, San Leandro, Cal.
646,553.—WHARF—H. C. Holmes, S. F.
646,832.—FLUSHER—S. C. Houghton, S. F.
646,737.—FISHING REEL—J. Howe, Tacoma, Wash.
646,843.—WATCH DIAL—E. Krahenbuhl, San Rafael, Cal.
646,845.—CURRYCOMB—C. F. Lafin, Astoria, Wash.
646,441.—MINER'S PICK—J. B. Lucas, Valley Springs, Cal.
646,447.—AIR BRAKE—C. E. Morgan, Portland, Or.
646,867.—IGNITER—O. Owens, S. F.
646,546.—BICYCLE BRAKE—P. W. Pratt, S. F.
646,560.—INK WELL—D. H. Rowe, Oakland, Cal.
646,505.—GOVERNOR—J. N. Rundle, Santa Barbara, Cal.
646,509.—BILL-CARRYING APPARATUS.—A. W. Thierkoff, Redding, Cal.
646,510.—SPRING CLAMP—A. W. Thierkoff, Redding, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

AUXILIARY MOTORS FOR VESSELS.—R. T. Power, New Westminster, Canada, three-tenths assigned to R. D. Perry of San Francisco, Cal. No. 646,374. Dated March 27, 1900. This invention relates to an attachment for vessels, which is designed to produce an independent power to be used for any desired purpose, either upon sailing or steam propelled vessels. It consists of one or more open-ended tubes or passages, extending through the vessel below the water line, and essentially parallel with the keelson. Within these tubes turbines or other water wheels are journaled, so that the rush of water through the tubes, caused by the movement of the vessel through the water, will propel the turbines or wheels. Connection is made in any suitable or desirable manner with the shafts of these wheels, and the power thus derived may be applied either to an electric generator, and through the generator, or directly, if it is a steam-propelled vessel. The power thus derived may be transmitted to a propeller shaft to assist in propelling the vessel.

WHARF CONSTRUCTION.—H. C. Holmes, San Francisco, Cal. One-half assigned to Carl Uhlig, same place. No. 646,553. Dated April 3, 1900. This invention relates to improvements in wharves and like structures, and its object is to provide a stronger and more permanent foundation than can be had by the use of single piles as usually driven, and means to provide for protecting the wharf from the shocks

caused by vessels or other floating objects striking against it. It consists of piles driven in clusters, and a wooden enclosing cylinder sunk around the piles with its lower end embedded in the mud, and a filling of concrete which surrounds the piles within the cylinder. Exterior to the line of the wharf structure which is built upon these piles are a series of fender piles at a distance from the edge of the wharf and ribs or timbers are bolted thereto in lines above and below the wharf timber and independent thereof. Springs are placed intermediate between the fender piles and the edge of the wharf, and these are of sufficient strength to resist the pressure when a vessel strikes against them, and prevent damage to the wharf itself.

INK WELL.—D. H. Rowe, Oakland, Cal. Assignor of two-thirds to W. E. Gibson and C. H. True, of same place. No. 646,560. Dated April 3, 1900. The object of this invention is to provide a well with means for fixing it in an opening or socket in the desk, a rotatable cap having a cover normally closed by gravitation, through which cover when opened the well can be replenished. The rotatable cap has an opening in the side coincident with a similar opening in the top of the well so that when these openings are brought in line a pen can be dipped in ink through the connected openings. When the well is out of use the cap is turned and a lip or flange upon the cap covers the opening and prevents the entrance of dust and the evaporation of the ink.

SPRAYING APPARATUS.—G. A. & R. F. Dunn, Dinuba, Cal. No. 646,523. Dated April 3, 1900. This invention is designed for the spraying of fruit trees, plants and for other like purposes. It consists of a main containing reservoir, a supplemental closed chamber, with connections by which liquid is delivered from the first to the second chamber, an air pumping mechanism connecting with the closed chamber and through it discharge air into the main chamber. Independent liquid and air conveying pipes are lashed together and a nozzle is provided common to both, with an automatic discharge regulating valve for either liquid or air; means are provided for agitating the liquid to keep it thoroughly mixed before being discharged.

Asphalt Paper Pipe.

After much effort to find a good substitute for iron pipe, a combination of asphalt and paper has been devised and patented that seems to fill all requirements and is meeting with a fast growing demand as its merits become better known.

In making the pipe, a strong, long fiber paper is saturated with asphalt, then wound on a mandril till the desired thickness and strength is obtained. This combination and method of construction produces a pipe, light, but very tough, and with perfectly smooth inner surface, offering but little friction to the passage of fluids. From the nature of its composition, this asphalt pipe is considered impervious to chemical action of alkalies, dampness, rust, gases, etc. Being an absolute non-conductor, it is free from the destructive effects of electric currents that of late years have caused so much trouble with iron pipe, and for the same reason water is less likely to freeze than in ordinary pipe. The purposes to which the pipe has already been extensively applied, such as conducting water under pressure, mine ventilation, sewers and drains, electrical conduits, etc., in many cases subjecting it to the severest tests, proves satisfactorily the many good qualities claimed for it by the manufacturers.

For cheapness in transportation, ease of handling, toughness and durability, certainly this asphalt paper pipe seems to possess many advantages and deserves the careful investigation of those requiring pipe for any purpose. McCarthy & Mackay, agents, at 226 Market St., San Francisco, will furnish full information upon request.

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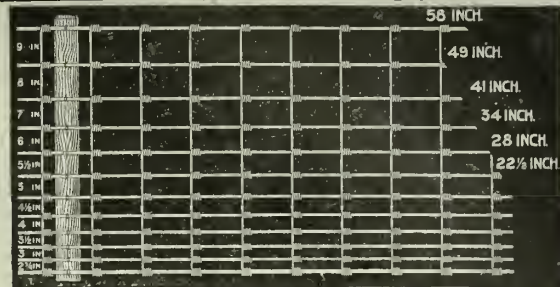
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The original and genuine preventive vaccine remedy for Black Leg. Officially endorsed in all the cattle-raising States. Successfully used upon 1,500,000 head in the U. S. A. during the last four years. Write for official endorsements and testimonials from the largest and most prominent stock raisers of the country. "Single" treatment vaccine for ordinary stock; "Double" treatment vaccine for choice herds.

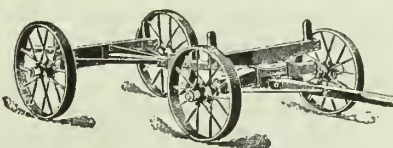
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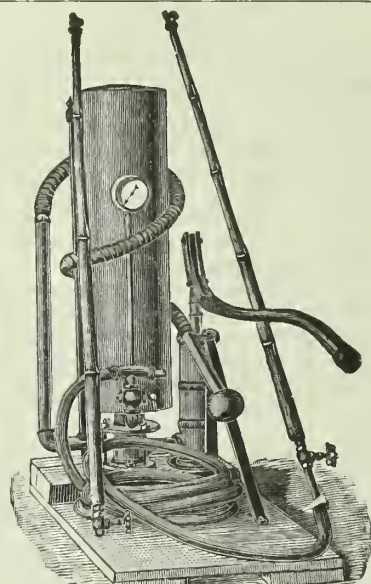
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Would a man send such an endorsement as the following, commending that great veterinary remedy,



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Used and Endorsed by the Adams Express Company.

Dr. S. A. Tuttle, Boston. St. John, N. B.
Dear Sir:—Without solicitation from yourself or anyone concerned in your Elixir, I wish to state that I have been using that article during the past 10 years, and I am still using it with the greatest satisfaction. I can conscientiously recommend it to any and all persons requiring an article of this kind. Wishing you every success with your great remedy, and with my best regards, I am,
Sincerely yours, E. SEROR WILLIS,
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Tuttle's Elixir in the stable cures colic, curb, splints, contracted cord, ring bone, spavin and internal ailments.

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Dr. S. A. Tuttle, 33 Beaver St., Boston, Mass.

Beware of all so-called Elixirs, none genuine but Tuttle's.

Patrons of Husbandry.

Grange Picnic.

TO THE EDITOR:—Selma and Tulare Granges held a joint picnic on Saturday, April 14th, on Kings river, close to the S. P. railroad bridge. The early part of the morning threatened rain, preventing many from going who otherwise intended doing so, but all signs of rain cleared up about 10 A. M., and from then on a nicer day for a picnic could not have been selected.

The attendance was good—large enough to admit of a good mutual, social intercourse of all present, all feeling it to be an occasion on which they were to get the greatest enjoyment out of it and to assist every one else in doing so.

Selma Grange had formed a programme of exercises and the choir of that Grange had rehearsed and rendered in an excellent manner a programme of Grange songs.

The first number on the exercises programme was the lunch, by all present. This was more than abundant, prepared to a dot, and partaken of with an appetite.

After the lunch was the first song, succeeded by an address of welcome by J. J. Roadhouse, Worthy Master of Selma Grange, followed by a song by the choir and responded to by Prof. Worthen, Worthy Master of the State Grange of California, and by Major Berry, Worthy Master of Tulare Grange. The next speaker was E. C. Shoemaker, Worthy Steward of the State Grange, who read a well-written paper, followed by Mrs. Worthen, Thomas Jacob, A. J. Woods and G. S. Abbot. All addresses, except Mr. Shoemaker's, were extemporaneous, being unprepared, but were to the point, strictly farmer-like, that of Mrs. Worthen, who had no reason to think she would be called upon, being the address of the day, typical of the bright woman she is and of the tenets inculcated in the Grange.

Worthy Master Worthen told of the objects of the Grange and the accomplishment of its past, present and future work for the farmer and humanity.

Major Berry told of the work accomplished and being done by Tulare Grange, the earnestness of its members, and the sociability of its meetings.

Mr. Woods and Mr. Abbot told of the early days of the Grange in California and its many severe trials. Bro. A. J. Woods is a charter member of Liberty Grange, San Joaquin county, organized Sept. 11, 1873, and has continued in affiliation with some Grange ever since.

O. L. Abbot is a charter member of Santa Barbara Grange No. 50, organized Aug. 19, 1873, was the first Master of that Grange and the first Overseer of the State Grange; he is not now affiliated with the Order, but

his better half is a member of Selma Grange. He came to the picnic holding her apron-strings. Between each address the choir sang and closed the programme with a song. So well did all present enjoy the occasion that, at the request of Bro. Roadhouse, Bro. Tuohy offered the following resolution, which was carried without a dissenting vote:

Resolved, Selma and Tulare Granges will annually hold a joint Grange picnic, of which the present shall be the first; that sister Granges, the farmers and their families of Fresno, Kings and Tulare counties are hereby cordially invited to join us on these occasions, making these picnics typical farmers' meetings.

Time and place of meeting to be hereafter mutually agreed upon.

Selma Grange choir did themselves proud. It is composed of Mr. E. R. Holton, organist and leader, Mrs. J. J. Roadhouse, Mr. and Mrs. Christerfee and Mr. T. B. Smith, and your reporter cannot resist saying that Mrs. Roadhouse would be a desirable acquisition to any choir.

A resolution was passed thanking Mr. R. S. Curley for the use of the picnic grounds.

The members of Tulare Grange wound up the day with a lunch at 5:30 P. M. at the camp of Bro. and Sister Styles and Bro. and Sister Mull on the river bank.

J. T.

Canker Worms at Calistoga.

TO THE EDITOR:—A small green worm, called by many here the "inch worm," is making great havoc with the foliage and prunes on many prune orchards here. One man has a number of acres of trees that are as bare as in the winter—not a single leaf or prune on the trees. He has rasped the rough bark off the trees about 6 or 8 inches wide, then wraps brown paper around the trees and fastens with two or three 10-ounce tacks, then applies with a brush, one-third black-strap molasses and two-thirds coal tar. He then shakes the trees and taps all the branches lightly with long, slim poles; the worms drop by the thousands. They make for the tree and are caught in the tar and die. My neighbor has had ten men at work at her prune trees for the past few days, and I think she will conquer most of the worms. I am now commencing on mine, and will have my hands full for a week or more.

I thought the above if printed in this week's RURAL might be of some value to many who raise prunes and may have the same trouble with them that we are now having.

IRA W. ADAMS.

Calistoga.

FROM ANOTHER READER.

TO THE EDITOR:—I thank you sincerely for your help in finding an effective remedy for the canker worm. The Paris green spray was a failure. I followed instructions till I saw it did not stop the worms, and then strengthened the spray till it burst the leaves, and still it did not stop them. I then tried paper bands covered with tar and molasses, shaking the trees to get the worms off. This I find effective, and expect to be rid of the worms in two or three days.

J. K. GARNETT.

Calistoga.

Black Leg Vaccine.

Reports concerning black leg, which is always liable to break out in the spring of the year, all seem to come from localities where the cattlemen have not as yet learned the value of the Pasteur method of preventing black leg, resembling vaccination to prevent smallpox in the human family. Wherever Pasteur Black Leg Vaccine is used, the death rate from black leg shows a phenomenal decrease. In some sections where the yearly mortality from this disease amounted to from 10% to 20%, not 1% of loss now occurs, the reduction in the death rate being due to the intelligent use of Pasteur Black Leg Vaccine. The single treatment vaccine, termed "Blacklegine," is by far the simplest method yet devised, as it is ready for use as sold and can be purchased at a most reasonable price. The Pasteur vaccines only cost from 10 to 15 cents per head, a sum so small when compared to the benefit they confer that the cost can hardly be said to enter into consideration. Cattlemen cannot afford to neglect this cheap and simple means to prevent loss, and those who have not already used Pasteur Black Leg Vaccine should do so before the disease breaks out. Prevention is better than cure; and in this case when once the disease develops there is no known cure. Credit belongs where credit is due, and to the Pasteur Vaccine Company of Chicago belongs all the credit for the introduction of black leg vaccination into North America. This occurred in 1895, since when nearly two millions of calves have been successfully treated with Pasteur Black Leg Vaccine. For full information, write to the Pasteur Vaccine Co., 54 Fifth Ave., Chicago, or 213 Examiner Building, San Francisco.

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The improved "Alpha" disc or divided milk-strata system is used in the De Laval separators only. Strong patents prevent its use in any other machines. The "disc" system makes the De Laval machines as superior to other separators as such other separators are to setting systems. It reduces necessary speed one-half, reduces size of revolving bowl, saves labor and power, enables simplicity and durability, skimming cold milk, running cream of any desired thickness, and insures absolute thoroughness of separation under practical use conditions, which is not possible with any other separator or creaming system.

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CROP FAILURES

are practically impossible where NITRATE OF SODA is used as a fertilizer. Its use has made an exact science of crop growing. You can always rely upon a good crop when it is used singly or in proper combination with other elements of plant foods.

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Single Strap Buggy Harness. Price, \$2.15.

\$50.00 RANGE FOR \$25.00

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Government Crop Report.

WASHINGTON, April 11.—The April report of the statistician of the Department of Agriculture will show the average condition of winter wheat on April 1 to have been 82.1, against 77.9 on April 1, 1899; 86.7, April 1, 1898, and a ten-year average of 82.8. While the ravages of the Hessian fly in Ohio, Michigan and Indiana will probably result in not one of these three States producing more than half a crop, an exceptionally high condition is reported from the winter wheat States west of the Mississippi river and from the Pacific coast. The principal averages are: Pennsylvania 72, Ohio 47, Michigan 57, Indiana 51, Illinois 88, Missouri 91, Kansas 99, Texas 101, Oklahoma 99, Washington 106, Oregon 100, and California 90.

The percentage of mortality among farm animals during the year ending March 30, 1900, was not only below that of last year, but was also below the ten and fifteen-year averages. Of horses, 1.8% are reported as having died from disease, against 2.3% the preceding year and a ten-year average of 1.9%. Of cattle, a mortality of 1.1% from winter exposure and of 2% from disease is reported, against 2.2% from exposure and 2.03% from disease the preceding year, and 1.6% from exposure and 1.8% from disease as the ten-year average.

Of sheep, the deaths from exposure amounted to 1.8% and those from disease to 2%, against 3.5% from exposure and 2.1% from disease the preceding year, and 2.6% and 2.3% the respective ten year averages.

No estimate of the number of swine on January 1 having been made by the department, the rate of mortality for the country at large cannot be determined. Of the seventeen principal States, twelve report a mortality below that of last year. In Texas the rate is unchanged, and only in North Carolina, Georgia, Alabama and Arkansas is it even slightly higher than in 1898-99. Only in five States containing an aggregate of less than 1,000,000 head of swine is the mortality reported above the ten-year average.

How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props, Toledo, O.
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WEST & TRAU, Wholesale Druggists, Toledo, O.
WALDING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.
Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Price 75c per bottle. Sold by all Druggists. Testimonials free.
Hall's Family Pills are the best.

THE VETERINARIAN.

Answers by Dr. Creely.

FOR A GUNSHOT WOUND.

TO THE EDITOR:—Hugh McCaffries, Tres Pinos, San Benito Co., has a cow which he thinks has got a bullet hole through the flesh of the neck, and he would like to know which way it could be healed up the best. The bullet passed right through so that you can see the holes on both sides very plainly. Perhaps Dr. Creely would be so kind and inform him what would be the best treatment for it.—SUBSCRIBER.

Syringe and wash with lysol solution, a tablespoon to one pint warm water. Use externally iodoform salve.

DR. CREELY.

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The Cyclopedia is in alphabetical arrangement and the first volume includes the letters A to D. We understand the later volumes are now being printed, and it is expected that the present year will see the completion of the work. The work will be furnished at \$5 per volume, and it can be ordered through the PACIFIC RURAL PRESS. A copy of the first volume can be seen at this office.

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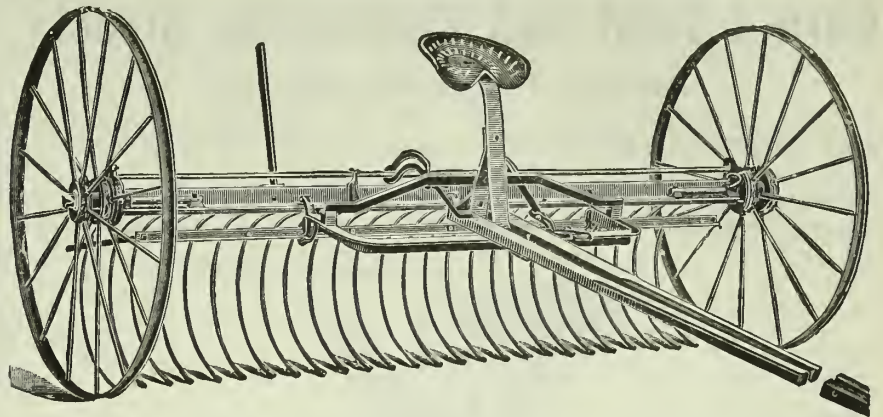


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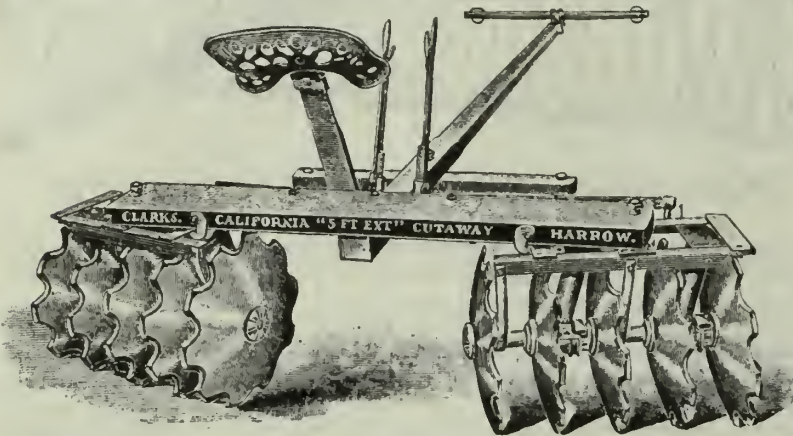
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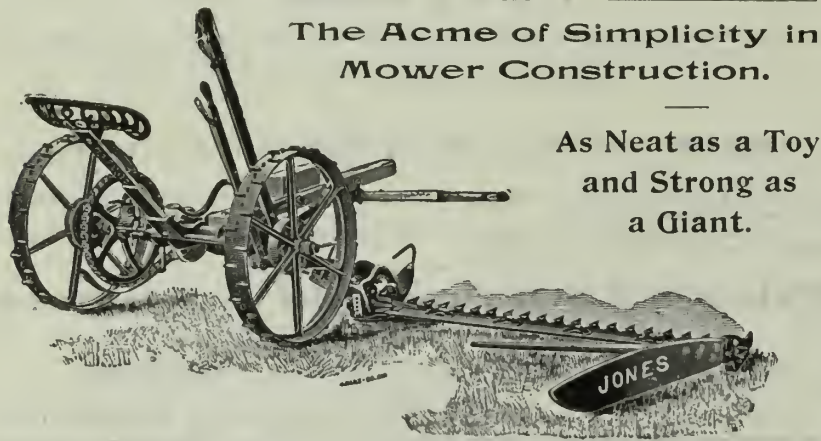
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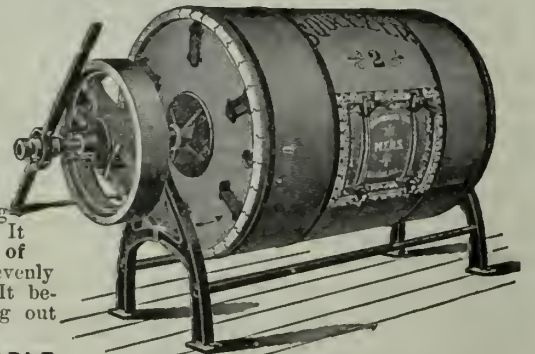
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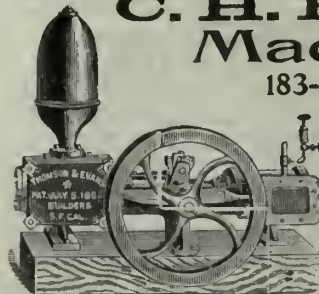
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Vol. LIX. No. 17.

SAN FRANCISCO, SATURDAY, APRIL 28, 1900.

TWENTY-NINTH YEAR.
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Electric Power in the San Joaquin.

Ever since the transmission of electric power for ordinary uses was demonstrated to be practicable, there have been grand anticipations of the benefits which would be conferred upon the California valleys by the distribution of power from mountain sources. These anticipations are being realized through the success of notable enterprises; and though one can hardly yet measure the ultimate advantages which

matters, and have illustrated several long-distance transmission enterprises during the last few years. The engravings on this page illustrate one of the latest extensive undertakings, known as the Mount Whitney Power Co. of Visalia, Tulare county. The first engraving shows the point where the water is diverted from the Kaweah river at Oak Flat, 45 miles east of Visalia, at an elevation of 2400 feet. The water is taken through a tunnel, 47 feet long, through solid rock. The tunnel exit, where

across ravines and rocky places. The second engraving shows the flume rounding a rocky point. At intervals sand boxes and waste gates have been provided, so that any sand which might find its way into the flume can be disposed of before reaching the pipe. The carrying capacity of the flume is in excess of present needs.

The flume discharges into a pipe extending 3300 feet to the power house, making a perpendicular descent of 1300 feet in that distance. The pipe line is



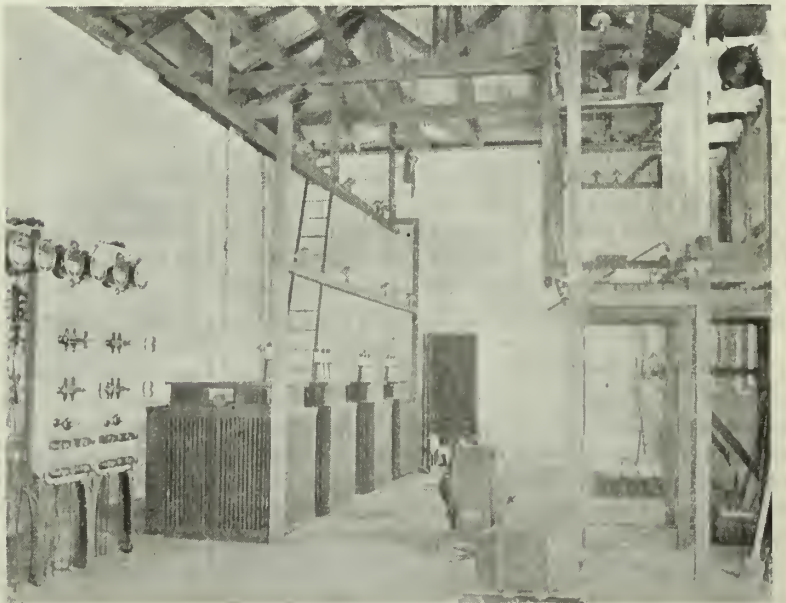
Mt. Whitney Power Co.: Tunnel Where Water is Diverted From River Into Flume.



Flume, Kaweah River Canyon, Mt. Whitney Power Co.



Hoisting Pipe Up Mountain Side, Mt. Whitney Power Co.



Visalia Sub-Station, Mt. Whitney Power Co.

will be conferred, we are certainly making rapid strides toward such surprising consummation. Mountain water power is being translated into valley energy in all parts of the State, and, in addition to the lighting and manufacturing uses which are being served, a constantly increasing service is being performed for agriculture. At the present time it is chiefly employed for pumping, but it will not be long before not alone stationary motors will be used, but we have no doubt that machines for field operations will receive the energy in their own internal workings and be cheaply impelled thereby. Beginnings have been made in these directions, and inventors will doubtless pursue such problems until things now unthought of will be realized.

We have always taken much interest in these

the wooden flume begins, is above the river and out of danger from high water. The entrance to the tunnel is at right angles to the river.

The flume is built over a rough, mountainous country; for 30,000 feet it meanders along the steep mountain side, in places over granite boulders and smooth bluffs, or along perpendicular cliffs, where points for its foundation timbers were blasted out of the solid rock. The flume has a uniform grade of 1 foot in 200—26.4 per mile—is constructed of redwood boards 1½ inches thick, is 3 feet wide and 2 feet deep, rests on 4x4 sills, spaced 4 feet apart, and is enclosed by posts and caps of 2x4 set at each sill. The cracks in the flume are covered with battens 4 inches wide and 1 inch thick, nailed on the inside. Here and there trestles are required to support the flume

buried in a deep trench most of the way, particularly the lower 2000 feet. Elevating the pipe to its place on the mountain side was accomplished with the trolley system, shown in another engraving. The pressure registered at the nozzle in the power house is 565 pounds per square inch. Water issues from the waste nozzle in a stream as solid as a bar of iron. The power house is equipped with a fine plant of water wheels and electric generators and accessories of the latest designs and great capacity. About 21 miles from the power house the line is branched, one line going southerly through Exeter and Lindsay to Porterville, the other going westerly to Visalia and thence to Tulare. The distance from the power house to Porterville is 43 miles, to Visalia 29 miles and to Tulare 40 miles.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, April 28, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Mt. Whitney Power Co.—Tunnel Where Water is Diverted from River into Flume; Hoisting Pipe up Mountain Side, Mt. Whitney Power Co.; Flume, Kaweah River Canyon, Mt. Whitney Power Co.; Visalla Sub-Station, Mt. Whitney Power Co., 257.
EDITORIAL.—Electric Power in the San Joaquin, 257. The Week; Cheese in California, 258.
QUERIES AND REPLIES.—Parasitized Plant Lice; Leaf Spot and Lack of Vigor; Thinning Fruit; Peanut Growing; Wells in Quicksands; Carpet Grass; A Collection; A Light Green Cutworm; Cow's Deeds, 249.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending April 23, 1900, 259.
STATE BOARD OF AGRICULTURE.—California Agriculture in 1899, 260.
HORTICULTURE.—Disinfecting Old Tree Holes; The Booming of the Olive, 261.
THE DAIRY.—Pie Melons for Stock Feed; Meals for Dairy Cows; Small Silos, 261.
THE POULTRY YARD.—Incubator Chicks and How to Raise Them, 261.
THE SWINE YARD.—Evolution of the Commercial Hog, 262.
THE VINEYARD.—Frosted Vines and Their Treatment, 262.
AGRICULTURAL REVIEW.—263.
THE HOME CIRCLE.—Manhood; Sequoia; O Absalom, My Son! 264. The Right Kind of Head; Baden-Powell's Joke; The Pebbles' Lesson; Billie Fairfield's Promise, 265.
DOMESTIC ECONOMY.—Hints to Housekeepers, 265.
THE MARKETS.—Produce Market; Fruit Markets, 266-267.
THE STOCK YARD.—Live Stock in the Coming Census, 268.
PATRONS OF HUSBANDRY.—Festive Days at Geyserville Grange; Los Gatos Grange; Co-operative Business Enterprises, 270. Sonoma Pomona Grange; San Jose Grange, 271.
THE VETERINARIAN.—Answers by Dr. Creely—Splints; Injury to Milk Vein; Lameness, 271.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents; Gold and Silver Product of California by Counties for 1899, 269.

The Week.

Considerable local rains, covering wide areas, have fallen since our last report, and have still further brightened the outlook for field crops and pasturage. There is in many localities feed far beyond the grazing machinery available, and the abundant feed and high prices of animal products is turning the thought more and more strongly to stock lines. The present hay prices and the rains together will help the grain output, as all that can make grain will be allowed to stand, in the hope of profit in that direction, while none can be seen in hay. It is just possible that too much of this may be done and choice wheat hay may not be in oversupply, while it does look as though fields which would only yield common hay would hardly pay for cutting. There are many things in the present situation to think about. Fruit shipping is proceeding quite actively with the cherries and the season is making a good start. Reports are current of large fruit yields and advance sales at low rates. These reports are for a purpose. We do not think there will be more fruit than can be placed at good prices.

Wheat is still further off and dragging. Two cargoes have gone since our last report but shippers have apparently about all they need in the present scarcity of ships. Barley is steady and unchanged, though futures have stiffened a little on a northwind basis. Dark oats are firmer, as the Government is buying, and white oats show sympathy with their colored brethren. Corn is still high for yellow and white corn low. Rye is a little better. Hay is unchanged. Receipts are not large but are enough. Choice bran is in better tone. Beef is easier and mutton tends the same way. Hogs keep up well, though 600 Eastern hogs have come in. Butter is quite steady. It is in good condition and the surplus is put away in good shape. Cheese is moving better and the talk is of lighter stocks later than usual. Eggs are doing better and have a firmer tone. Poultry is all firm and selling well, except inferior broilers, which are called canary birds, for lack of size. Oranges are weak, except fancy Navels, and most stocks are of low grade. Small fruits are becoming more abundant. Dry beans are firm, especially Pinks and Limas. Mustard seed promises to be in light supply this year. Old onions are out and new reds are selling well, considering quality. Old potatoes are firmer and new are lower, though supplies are not excessive yet.

Cheese in California.

There are some considerations in connection with cheese making in California which deserve close scrutiny and light-giving discussion. The subject is properly based upon these lines in the recent publication entitled "Notes upon Dairying in California," by R. A. Pearson, Assistant Chief of the Dairy Division of the U. S. Department of Agriculture, a document to which we recently alluded in another connection. Mr. Pearson writes:

California dairymen and commission men are willing to admit that their State does not produce much cheese suitable for export. As a rule, it is soft, open and moist and must be used soon after it is made. The trouble, in all probability, is due to improper methods of manufacture, and the surest method of remedying the matter is to teach the science of cheese making and the systems successfully followed elsewhere. If such instruction were offered there is no doubt but that those interested would avail themselves of it.

This is just such a comment as an expert visitor wholly unacquainted with the local issues in cheese should make. The fact is that the California style of cheese is wholly without standing as a commodity for anything beyond local trade. It is not a material suited to what we call commerce. It is a provincial affair and a low provincial affair at that, because it does not receive even our best local trade. It does not suit those of our own people who know what good cheese is. It ministers to cheap uses. It is a jewel of the lunch counter and charm for the workman's camp.

But though Mr. Pearson gives California cheese about the right rating as the world judges cheese, and though he is right in the view that its adaptation for export is very low, he errs in his conclusion as to the reason for its existence and the ways by which a better article of cheese is to be brought about. We do not lack for knowledge as to how to make export cheese. We have dairy proprietors who have made in their old Eastern factories cheese which commanded the highest price for export, and we have plenty of makers now devoting their energies to the output of ill-cured California flats who would prefer to produce high-class cheddar cheese because they respect that article as they cannot the flats. It is not at all ignorance of "the science of cheese making and the systems successfully followed elsewhere" which prevents the manufacture of better cheese in California, and so long as present conditions continue no amount of instruction would help the matter. What then are the causes which control style in the California product?

Popular ideas of cheese are both favorable and unfavorable to those who desire to produce better cheese here. The people demand Eastern cheese for all the higher uses. This might be taken as an advantage, and the conclusion would be that this discriminating demand could well be ministered to by the manufacture of the Eastern style of cheese. This idea has led a number to make determined effort in this direction. Their first disappointment was that it was not a certain style of cheese that the people wanted, but a certain product actually made at a distance and brought here by rail. These makers, then, even when they had made under our favoring conditions a better cheddar cheese than they made at the East, could not sell it at all under the California cheddar brands which they hoped to establish and which they hoped Californians would take a local pride in. It did not matter that it was a better cheese of the same style; buyers would not even look at it. A subterfuge was then resorted to. Eastern boxes were brought overland and San Francisco merchants whose consciences were sufficiently pliable covered these boxes with Eastern brands and even the initials of the railways over which imported cheese should have come. In this humiliating way California cheddar cheese of the highest excellence managed to be sold in a market which should have been proud of it and should have given it preference under its own name.

The San Francisco prejudice in favor of Eastern cheese approached insanity. The brand preferred was not of an Eastern manufacturer at all, but of a cheese merchant who bought on the open Eastern market to fill his orders, and people persisted in calling for the brand because they supposed that it covered a distinctly fine cheese of a particular make. Thus the early California cheddar cheese manufacturers were conquered by the brand of a firm to

which they had themselves sold cheese during their Eastern manufacture, and had thus helped to build up the merchant's reputation, which was fatal to themselves in the new field. The Californians were thus crushed by their own good work in previous years.

But the unreasonable demand for the Eastern product of the same style acted in another strange way against the California producer. Though the San Francisco merchants were forced to handle the California cheddar product under the guise of Eastern for a time because producers threatened to sell their own product in this market, they never did enjoy the trade. It was not because their consciences revolted at deception, but because they could make so much more money by their dealings in Eastern importations. Sometimes, by proper buying and holding, they could clear 5 cents per pound on this trade, while in selling the California cheddar product on commission they could make less than 1 cent per pound. It was evidently to the interest of the merchant to trade honestly upon the popular prejudice and sell Eastern cheese. Thus the paths of the people who tried to bring the California make of cheese up to Eastern standards became still harder, and naturally they wearied of the unreasonable conflict. Some of them returned to the California flat route and others abandoned the cheese line altogether.

And the last act of this caseous tragedy contains the catastrophe, as a last act should. The cheddar or export style of cheese was practically abolished by a law which was passed in the interest of good cheese, and was thus murdered in the house of its friends. For the purpose of preventing skimming milk for cheese and to prevent "filling," which was never done to any extent in California, a law was passed for factory brands and location of factories which caused an Eastern style of cheese made in California to disclose its exact origin. This might, on the face of it, seem to be a good thing, but it played directly into the hands of cheese importers and unreasonable prejudice, for the reasons previously mentioned, and all progressive styles of cheese to replace imports have had to be abandoned. We seem to stand almost hopelessly bound up in the chains of mercantile interest and popular prejudice and condemned to make the low style of cheese which has come to be recognized as California, and which can be sold only at the low prices which people are willing to pay for such cheese.

Perhaps as Mr. Pearson becomes aware of this fact, he will see that his conclusions do not cover the real issue. Education is needed, it is true, but it is not education of cheese makers at present. The people need education so that they can recognize the fact that the best possible cheese of Eastern style can be made here. There is no doubt of that. The writer has been intimately acquainted with export cheese for thirty years, and has never seen better than that made by skilled Eastern makers who have tried to establish themselves in that line in this State. The makers themselves say that they have made better cheese here than they ever made at the East to be sent here. Our dairy conditions in some parts of the State are simply unparalleled; but California export cheese can not sell at present on its merits. The law for purity of cheese proceeds upon a geographical basis and favors the perpetuity of present prejudice and personal profit and is neither in the interest of the consumer nor of the State.

In these comments we have only glanced at one phase of the situation and have not undertaken to sound the depths of popular ignorance upon cheese as food. Nor can we go further at this time. Prejudice, which buys alone by the brand in the better class of cheese, is balanced by ignorance, which is willing to buy two weeks or less from the hoop in the lower class of cheese, which is now about all that can be profitably made in this State. We need a better popular conception of what cheese is and what cheese is for, but that is another story and a longer one.

SENATOR PERKINS has introduced a bill to condemn the big tree grove of Calaveras for public uses and appoint a commission to estimate damages to the owner. This step is being taken because it is understood the recent purchaser proposes to make Uncle Sam pay an extortionate price something like ten times the value of the property.

QUERIES AND REPLIES.

Parasitized Plant Lice.

TO THE EDITOR:—I send a deposit of insect eggs on an orange leaf. Please explain.—C. REEVES, Rancho Chico.

The orange leaf which you sent does not contain eggs, as you supposed, but the deposit is made by a group of aphids, nearly every member of which has been parasitized by a chalcid fly. After the aphid receives in his body the eggs of the chalcid fly, the body undergoes a transformation, becomes enlarged, changes color until it is a brownish globular body and has the general appearance of a large insect egg, as you considered it. After feeding for a time upon the internal substance of the aphid, the larvæ of the chalcid fly goes into the pupa state and transforms into a fly, which breaks its way out from the shell of its defunct host. When the box containing your specimens was opened, it was seen that many of these flies had gone free, leaving a round hole in the body of the insect through which they emerged. We do not remember to have seen a colony of aphids so thoroughly parasitized as the one you sent. It is common to find groups partly parasitized and partly in a healthy state; but these were almost, if not wholly, destroyed. Of course, this chalcid fly is a beneficial insect and saves the horticulturist very much anxiety and expense by its beneficial work. So long as these chalcid flies are so abundant in your neighborhood as this specimen would indicate, you need fear no injury from the attacks of aphids, or plant lice, as they are commonly called.

Leaf Spot and Lack of Vigor.

TO THE EDITOR:—I send some clippings from French prune trees. Can you tell me what is the matter with them and the remedy, or prevention, if there be any?—SUBSCRIBER, Alma.

The prune leaves are affected with one of the leaf spot fungi, which can be readily repressed by spraying with the Bordeaux mixture—first, just as the leaves are opening, and again later, if the brown spots appear. The leaves you send are, however, too small and the shoots too short and thin for a healthy tree, and you have either allowed the fungus to work in previous years or the tree lacks vigor through lack of plant food or water. It made hardly an inch of new wood last year and cannot be a healthy tree. The growth indicates to us that the tree needs pruning out of surplus shoots, or manure, or water, or all of them.

Thinning Fruit.

TO THE EDITOR:—Have Californians any economical process of thinning fruit? In short, how do they do it? We have an immense crop on the trees now and it must be thinned.—H. H., Las Cruces, New Mexico.

No; there is no very economical way of thinning fruit, and yet there is no orchard operation which pays such large returns for the investment made. Some claim that in thinning apricots for drying they can work faster by knocking the fruit off with a light pole, and have the fruit as salable as that which is hand thinned, but general sentiment is strongly against pole thinning. The usual way is to thin with both hands, and naturally one acquires much speed, but that is about the limit of improvement, unless we can get men with more arms and eyes.

Peanut Growing.

TO THE EDITOR:—I have a few acres of sandy land which I wish to plant in peanuts. Can you tell me which variety is the best and when is the proper time to plant?—F. J. WASTER, Fresno.

The variety called the "California" is generally best in bearing, and it sells best, as compared with the White Virginia and Tennessee Red, which are the other kinds grown to some extent. Planting can be done at once.

Cow's Deeds.

TO THE EDITOR:—What per cent of butter fat and what quantity of milk should a cow give to be profitable? Are the Holstein cattle in California generally supposed to be as good milkers as any other breed?—SUBSCRIBER, Salida.

The standard of acceptable milk at some creameries buying milk by weight is 4.2% of butter fat. Of course, cows have to be judged by the yield of milk and the fat per cent taken together. Thus the Holstein-Friesians, for instance, compensate for a low average of fat by a high average yield, which, taken

together, will insure a large butter yield. A cow giving 5000 pounds of 4% milk in a year is a profitable cow—better than the average dairy cow, but not as good as many to be found in dairy service. There are cows which have done nearly five times as much as that.

Carpet Grass.

TO THE EDITOR:—Please describe what is called carpet grass. Where does it grow? When does it begin to bloom and how long does it last? It is said to be a great honey plant. I would be pleased to have you tell in your paper all you know about the plant that would likely interest a bee man.—D. C. JENKINS, Orangevale.

Carpet grass is the common name of Paspalum compressum or platycarale. It is a slender, creeping, perennial grass, naturally growing on low, moist ground, abundant near the coast from Virginia to Texas, also in Mexico and southward. It is a valuable pasture grass and its blooming depends, of course, upon where it is growing. We never heard of this as a bee forage plant and probably our correspondent has in mind some other plant. That is one of the troubles with common names: they mean different things in different places. If any reader can help us with this matter we shall be obliged.

Wells in Quicksands.

TO THE EDITOR:—I was greatly interested in your articles about pumping water for irrigation. We have an abundant supply of water, with a lift of not more than 20 feet, but we have not yet learned how to overcome the quicksands, which make well sinking of any kind rather difficult; and, then, the sands pack so closely together that the water percolates through the sands to the wells or pump very slowly. My opinion is that many wells could be put down here if they could be made to work satisfactorily. Can you give us any light?—HIRAM HADLEY, Las Cruces, New Mexico.

Some of our advertising readers may be able to send Prof. Hadley some descriptions of the devices they employ to surmount these difficulties. We know that a sand pump is very successfully used in freeing wells of such materials and increasing the flow.

A Collection.

TO THE EDITOR:—I send three captures just made; one is a long, slim beetle, which bores into the prune twigs; another is a slim, brownish yellow beetle, and the third is black. What are the last two doing?—READER, Mill Valley.

The twig borer is Polycaon confertus, which works on both olive and prune twigs, but is seldom abundant enough to do much harm. The slim, yellowish beetle is a podabrus—a good eater of plant lice. The black one is a black hemipter, which is often found on wild oats, and sucks sap in good shape, but never is numerous enough to be a pest.

A Light Green Cutworm.

TO THE EDITOR:—Your answer about the parasitized aphid colony on an orange leaf is very interesting. What is the enclosed?—C. REEVES, Chico.

It is a cutworm, but differs from the most common kinds in being of a light green instead of a greasy gray aspect. It is, however, a larva of the same genus (agrotis) and can cut as well as the other kind.

AND now the cannery promoters seem to be putting on the mantle of the old-style creamery promoters. We have not heard of them in California as yet, but they are likely to turn up any day. It may be that California fruit men know too much to be easily misled, but still it is interesting to note the method of proceeding, as described by the Rural New Yorker:

A slick, plausible agent comes to town and talks to business men about the great value of a creamery or canning factory. Of course, they agree with him, for the town is to get the factory and they are to put up but little money for it. Then some prominent farmer is secured. Usually he gets a bonus for his work. He goes around among the farmers and "talks it up." He is a good talker, and the result is that farmers sign an agreement to take a certain amount of the stock of the concern. Then a meeting is held, a committee appointed, and usually an agreement is made with the agent to have him build and stock a factory. He names his own price, which is usually 50% or more greater than the outfit is really worth. Then the promoter goes ahead and puts up the plant. It is usually "accepted" without hesitation by the committee, and then the promoter starts out to collect. By means of bluffs, wheedling, promises or threats he collects in cash or notes a good share of the subscriptions. He then gets out—usually discounting the notes at a county bank. He leaves behind a factory costing far more than it should, and usually altogether too big for the local needs. The business men and "prominent citizens" who subscribed large sums do not, as a rule, pay much actual cash. The cost is usually paid by the farmers who subscribed smaller sums. If the farmers are ready to put up more money and produce enough to keep the factory busy, they may in time

get their money out. It is usually hard work to do this, and, in many cases, the factory stands idle after one brief and disastrous season. It will be asked: How is it possible to work such a game on shrewd, level-headed farmers? This is one of the mysteries of agriculture. It remains a sad fact that, while an honest and respected man cannot induce his neighbors to co-operate, an irresponsible and strange rascal can induce them to throw their hard-earned dollars into his hat. Who is the wise man that will explain this thing?

This last thing is indeed past finding out. California is, however, making such strides in co-operation that we shall soon claim the State an exception to the rule.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 23, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

SACRAMENTO VALLEY.

Warm, pleasant weather prevailed up to Thursday, followed by cooler, and conditions were favorable for all crops. Rain on the 20th was beneficial to grain, pasture and fruit trees. In some localities, where the rainfall was heavy, grain was slightly damaged. Prospects continue good for large crops of grain and hay. Summer-fallowing is practically completed, and a large acreage is the result. Hops are doing well. The frost on the 9th damaged Muir peaches and some other varieties of fruits, but later reports show that the damage was much less than at first estimated, and will not materially affect the yield, except in a few orchards. Cherries were cracked by the rain, but the loss was not serious, and the fruit is being shipped freely. Citrus fruits are in good condition.

COAST AND BAY SECTIONS.

The temperature has been nearly normal during the week, and conditions have been favorable for the growth of grain and fruit. The rainfall was heavy in some sections, but no damage has been reported, and it is believed all crops were greatly benefited. An insect called "white louse" has been doing some damage to grain, but it is said the rain has destroyed the pest. Grain continues thrifty in nearly all sections, and a large yield is probable. The heavy frost on the 9th killed apricots and other deciduous fruits in portions of Santa Clara and Napa counties, while other sections appear to have been but slightly damaged, and in some localities there was no injury to any of the fruits. A worm has destroyed prunes in some orchards near Calistoga. Prospects continue good for an average yield of deciduous fruits.

SAN JOAQUIN VALLEY.

The weather was generally clear and warm during the fore part of the week, and high north wind in the southern portion of the valley did some damage; the latter portion of the week was cloudy and cool with generous showers in all sections. The rain was very beneficial as a whole, although some injury was done to the hay crop. In the southern portion of the valley some of the late sown grain was too far gone to be saved by the rain, but in the central and northern portions the late sown grain will now make a fair crop. Early sown grain will make good crop in all sections. Fruits of all kinds are doing well and the outlook is for a large crop. In some sections plums and prunes have fallen, but it is generally thought the trees retain as many as can be brought to perfection. The hay crop will be good and feed is plentiful. In some localities the vineyards were injured by the frosts of the previous week, but reports would indicate the injury was confined to a few small areas.

SOUTHERN CALIFORNIA.

Warm, dry weather continued during the early part of the week, changing to cooler on the 20th, with light rain throughout the section. The rain came too late to benefit grain, except possibly in some parts of the coast region and in the mountain valleys in the extreme south, where light crops will be gathered. Pasture was considerably improved. Barley hay is of fine quality, but the yield is light; the rain damaged hay in some sections.

Deciduous fruits are not doing as well as had been expected, and the yield will be less than the average. Muir peaches are said to be three weeks later than last season. Apricots will be scarce. Grapes and citrus fruits are looking well. Walnuts are late, but present indications are that there will be a good crop. Orchards and vineyards were benefited by rain.

LOS ANGELES SUMMARY.—General rain at the close of week, fairly well distributed, helped growing crops and orchards, but was too late for grain; will make orange buds set better.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, April 25, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka.....	.62	47.98	32.23	40.16	40	54
Red Bluff.....	.18	21.71	19.55	24.44	42	76
Sa.ramento.....	.92	17.32	13.91	18.68	44	74
San Francisco.....	.21	18.10	15.86	21.31	46	68
Fresno.....	.58	7.93	6.76	8.25	42	90
Independence.....	.01	2.79	1.16	4.46	32	80
San Luis Obispo.....	.56	15.82	14.93	16.26	38	68
Los Angeles.....	.36	6.04	4.87	16.50	42	72
San Diego.....	.16	3.54	4.58	9.14	52	62
Yuma.....	T	0.79	1.34	2.84	50	96

STATE BOARD OF AGRICULTURE.

California Agriculture in 1899.

NUMBER VIII—CONCLUDED.

Report of the State Board of Agriculture, specially furnished for advanced publication in the PACIFIC RURAL PRESS.

IRRIGATION.

There is a constantly increasing use of water in California for irrigation purposes, and the area of irrigated land is steadily being extended. We would find it difficult to exaggerate the good results which follow the use of water on our soil; by its agency our yields can be made enormous, and a crop failure be made impossible. This was very well illustrated during the dry season of 1898, and that drought stimulated this work and revived an interest in this question which cannot fail to be of great benefit to the States. The irrigation work which has heretofore been done in California has been mostly of a private nature, the result of individual or corporate enterprise. The wisdom of developing every available water supply, and preparing for the future more general use of irrigation, cannot be too strongly urged upon our people. In addition to what has been done and is being in this line, there has been much discussion and some activity by parties favoring a national system of irrigation, and another party favoring a system under the direction and control of the State. These parties contemplate large general systems, the respective merits of which we will not here discuss. A large convention, chiefly made up of the State party met in San Francisco, December 14, 1899, and provided for the organization of the "California Water and Forest Association," wisely adopted a policy in harmony with both the State and national parties, and will work with officers of the government to promote irrigation work. We hope for good results from the work of this association. The chief factor in the development and conservation of a water supply is the protection and restoration of our forests. This is the one great point upon which all parties and factions unite, and which is worthy of the immediate attention of the Government.

ENLARGING MARKETS.

In addition to our splendid natural endowments the political and industrial developments of the last two years on this continent and the Orient have resulted to our direct advantage. The discovery of gold in Alaska has brought and will bring a large population to that Territory which will look to California for their food supply. This should furnish us with an extensive and profitable market. In addition, we may confidently look to see much of the wealth acquired in that frozen country seek this State as a profitable investment. Without entering upon the dangerous discussion of the merits of expansion, it is undeniable that the Orient has at last opened up to a very large American and European settlement and trade. Every indication is that this will continue and increase, and because of our ability to meet its requirements, and because of our advantage of location, we should enjoy the best of this commerce. As we write, assurances multiply that the Nicaragua canal will be constructed by the United States Government, the work to commence at an early date. This will give us direct and inexpensive communication with the world's choicest markets, and give a most favorable commercial location. When this canal is finished, we will find ourselves with direct rail communication with our Atlantic States, and with almost direct water competition regulating transportation rates. We will have an almost direct route to eastern South American ports, and will be midway along unobstructed lines between Europe and the Orient. Such a position cannot fail to make California a center of commercial activity.

GOOD ROADS.

Good roads are of the greatest importance to the whole State, but appeal first to the farmers whose immediate loss and inconvenience they relieve. The conditions in nearly every section of California demand better roads, built with some harmony of plan and of a permanent character. The present wasteful system of perpetual repair of dirt roads, which, after great expenditure, are never good, should be abandoned and some provision be made for the construction of permanent modern highways. This subject has been much agitated during the last five years with good results. The Department of Highways has done a good work by distributing information and directing thought to this question, and more properly graded macadamized roads are now being built in California than ever before. Judicious legislation in furtherance of this purpose would certainly be economic and desirable.

IMMIGRATION.

The last census showed California to have a population of only 1,208,130 people, which number, owing to a variety of causes, has not been greatly increased, while our territory is easily capable of supporting in plenty a population of 10,000,000. To the accomplishment of our highest development we need a con-

siderable immigration, which, however, should not be indiscriminate. There are in California many millions of acres of State and United States government land yet unappropriated, and of railroad land yet unsold. But little of such lands are fit for any profitable agricultural use, and we do not wish to invite people here with expectation of locating or purchasing lands of this character. These lands have, however, a value; in some cases very considerable, for timber, mineral or grazing purposes. But aside from lands of this description, large quantities are for sale in California. Small farms can always be purchased all over the State, while extensive tracts are equally available for large enterprises or for colonization purposes. The price of land in California is not high, and when our combined advantages of soil, climate, citizenship and social and educational opportunities are considered, is more than moderate. Lands can be purchased at from \$10 per acre upwards. Excellent land, well located, suitable for a variety of purposes, can be had at from \$25 to 50 per acre. At prices ranging from \$50 to \$100 per acre, splendid farms can be bought, located in our most favored sections and adapted to all the uses which have made California's name a synonym for agricultural wealth. Higher prices are because of location or adaptability to special purpose. We want and can provide for people with small capital, or laborers capable and willing to work. For the idle, the incapable, the turbulent, for the failures cast off by other communities, we have no place. The pioneer American population of California was of a high order, they were selected by circumstances for a splendid destiny. They were adventurous, ambitious, intellectual and physically strong. They left their impress on our industrial and social growth so that in little more than a generation we find ourselves in the very forefront of progress. To maintain out statehood and our supremacy is now the work of the sons of these men, who should be qualified by their heredity and experience for the work. It is to be hoped that those who hereafter seek California as a residence will be of a character worthy of citizenship in so favored a land, and worthy succession of the pioneers.

AGRICULTURAL EDUCATION.

Our agricultural population, because of the variety and luxuriance of our products, the condition under which they are grown, and our geographical position, is called upon to meet conditions which require training, experience and a high order of ability. Probably of no other farming class in the world is demanded so much technical and general information. Our farmers are not mere producers, they are in most cases that first, next manufacturers and third, merchants, jobbers or dealers. They first grow fruit, with all the knowledge of selection, propagation, grafting, pruning and cultivation which that demands; next they can or preserve it, and then sell the finished product in one of the most fickle and difficult markets of the world. They grow grapes, dry, cure and frequently seed and pack the raisin product, and then through a great wholesaling organization dispose of their pack; they breed and feed and bring to production a dairy herd, send the milk to a factory owned by themselves and their neighbors, and sell the resulting cheese, butter or condensed milk in Alaska, Central America or the Orient. They breed fine horses in California and sell them in New York, London and Vienna. They are men of large ideas. Visit a California orchard or vineyard, note the process of picking, selecting, grading and packing, the artistic paper, the dainty package, and you will be impressed with the fact that on this western coast a farmer is a man beyond his class, who has risen to the true dignity of his calling. From the excellence and variety of our products they should be introduced to the best markets in the world, and our people should be prepared to meet these conditions. The agricultural education supplied by our public institutions should seek to provide this training and fit our young men to meet the conditions the future will present. Work along practical lines has been done heretofore by the State Board of Horticulture, the Viticultural Commission and the Dairy Bureau. The farmers institutes now being held throughout the State under the direction of the State University are doing a most valuable work. If the agricultural course at the State University could be made to include practical instruction and preparation for the work awaiting a progressive California agriculturist, the greatest good would result, and the highly trained men sent out by that institution to the various sections of the State would lead thought in their several localities, and, in turn, instruct their less fortunate neighbors.

The experiment station work, and the short courses in agriculture in practice in several of the Eastern States, might be adopted here to advantage.

STATE FAIR OF 1899.

It affords us much gratification to be able to report the unusual success of the recent State Fair. With our appropriation reduced by \$5000, we gave one of the great fairs in the history of the Society. Notwithstanding this reduction we paid a greatly increased sum to breeders and producers in premiums, made permanent improvements aggregating in value over \$2000, gave a greatly improved and increased service, distributed to horsemen over \$3700 more

than in 1898, and, while doing all this, have decreased our deficit by \$1859.28.

The service we gave to the large number of exhibitors who favored it was so satisfactory to them, and the prestige of our successful fair is so great, that our task for 1900 should be light, and our capacity for usefulness has been enlarged. We were enabled to accomplish this result, however, only through the splendid assistance given us by citizens of Sacramento, who, through their State Fair Club contributed liberally and worked assiduously in our aid. We are pleased to here acknowledge our obligation to these gentlemen, who so unselfishly assisted us.

The press of California very generally united in notices of the fair, advertising its features, and urging an attendance upon it. The benefits derived from this generous aid were incalculable. We hope this friendly press found in the success of the fair satisfaction compensating them for their efforts. We have no means of rewarding this patriotic work, but shall ever remember it as a public service and a personal kindness.

We would respectfully urge that the Governor recommend to the Legislature at its next session the restoration of our appropriation to the sum heretofore given, and that he further recommend the payment of existing indebtedness, incurred during preceding years of depression. The State Agricultural Society has done great service in developing the resources of our State, in improving the varieties of her plants and fruits, and the breeds of her livestock, and by promoting their more general distribution. The State Fair is a great educational institution, where our farmers, manufacturers and breeders see all that is best in their various fields, learn the latest methods, the most approved types of excellence, and are thus qualified to produce or breed up to these high standards. The money appropriated in aid of our Society goes immediately back to the farmers as premiums or rewards for their enterprise, their skill or their intelligence. These men lead and instruct our people in their several sections and the amount heretofore given us to be paid to them is in the nature of a reward of merit and public service, and is imparting practical education at a small cost.

CONCLUSION.

We have endeavored here only to review the chief industries of California; we have not even tried to tell of her countless wealth. The story of her riches is written in sunshine, with fruit and grain and wine all over her fertile face. Nature has given us of her lavish bounty; our future is in our hands. If we prove worthy of our heritage, we will build here an empire where millions will dwell in happiness, and from whence our products in endless variety will go forth to all the peoples of the earth.

A. B. SPRECKELS, Pres.

PETER J. SHIELDS, Sec.

HORTICULTURE.

Disinfecting Old Tree Holes.

TO THE EDITOR:—In regard to planting trees in places where others have died out, I would say that the best way is, when the tree is dug up, to burn all the brush in the hole, or where this is not available, other brush can be burned in place of it. The fire destroys all destructive germs from the old tree, and thus disinfects the soil, besides leaving the ashes as a renovator of the soil, which may be somewhat worn out.

JAMES BOYD.

Riverside, April 15.

This will work as claimed to a limited extent, because the fire cannot reach the remnants of the roots beyond the excavation, and these will decay and may injure the roots of the new tree at some future date. Fortunately, however, pulling out as much root as possible and burning, as described by Mr. Boyd, reduce the danger to a low figure.

The Booming of the Olive.

TO THE EDITOR:—I read with much interest Mr. Geo. J. Mitchell's article on the olive in your issue of the 21st inst., and subscribe to every word he says. If there had been more men like him, men who were not afraid to make truthful statements, not only about olive growing, but, in fact, about fruit raising in general, it would have been better for the entire fruit industry, and would have saved many people from heavy loss. But false reports published in newspapers by unscrupulous people, grossly exaggerating the ultimate profits of fruit growing, are responsible for the misfortunes of so many. There may have been some that were misled by their enthusiasm, but the large majority were actuated by dishonest motives. Anybody who had given the subject attention ought to have known that the prices realized by Cooper at a time when he had virtually a monopoly of olive oil manufacture in California could not be maintained for any length of time. It was just on account of continually seeing statements in

the papers, setting forth the immense profits to be realized from the manufacture of olive oil, based upon the above mentioned fancy prices, that induced a great many people to engage in the business.

Mr. Mitchell says a great many Americans seem to prefer the adulterated olive oil; I think they do, and not only the Americans, but the large majority of foreigners likewise. About fourteen years ago I was living at a French boarding house; at our table were seated ten gentlemen, some Americans, some foreigners, mostly French gentlemen. One or two of the Americans were interested in olive culture, and would use nothing but Cooper's pure California olive oil, but the Frenchmen could not be induced to eat any of our salads because they did not like the taste of our California oil, but would prefer the article to which they had been accustomed from early childhood.

AN OLD SUBSCRIBER.
San Francisco.

THE DAIRY.

Pie Melons for Stock Feed.

Prof. M. E. Jaffa of the University Experiment Station, Berkeley, has just finished an analysis of pie melons furnished by Mr. O. B. Bryam of Westminster, Orange county, and has transmitted the following notes and comparative data which will be of wide interest where these cucurbits are grown :

COMPOSITION OF MANGELS, SUGAR BEETS, PUMPKINS AND PIE MELON.

PERCENTAGE COMPOSITION.				
	Pump- kins.	Man- gels.	Sugar Beets.	Pie Melon.
Water.....	90.90	90.90	84.30	93.55
Pure ash.....	.50	1.10	.90	.42
Protein.....	1.30	1.40	1.80	.97
Crude fiber.....	1.70	.90	.90	1.56
Starch, etc.....	5.20	5.50	12.00	3.18
Fat.....	.40	.20	.10	.32
Totals.....	100.00	100.00	100.00	100.00
AMOUNT DIGESTIBLE IN 100 POUNDS.				
Protein.....	1.20	1.10	1.60	.73
Fiber.....	1.10	.50	.50	1.17
Starch, etc.....	2.90	4.20	11.40	2.81
Fat.....	.30	.10	.10	.26
Fuel value, 1 lb. (calories).....	109	113	255	98
Nutritive ratio....	1:4:0	1:4:5	1:7:0	1:6:3

The pie melon is a much more watery food than any of the others named in the tables, the water percentage in one case reading as high as 95, while the corresponding figures for sugar beets is 84, and there are many cases where the amount of water in sugar beets will be even less than that given in the table on account of the sugar percentage ranging higher than 12. The average for sugar in the analyses of sugar beets, as given in Prof. Henry's late work, is only 9.8. Twelve per cent for the starch, etc., in sugar beets is a very conservative estimate for this State.

PROTEIN.—The sugar beet is fully twice as rich in digestible nitrogenous matter, or flesh formers, as indicated by the protein per cent, as is the pie melon, the respective averages being for the amounts digestible per 100 pounds—1.6 and .73. Both the mangels and pumpkins also range much higher than the pie melon in this important nutrient.

CARBOHYDRATES, STARCH, ETC.—The percentage of digestible starchy matter, or heat-producing elements of the food, in the sugar beet is 11.4, while for the pie melon we find only 2.8, a very wide difference.

The comparative total food values of the pie melon and the sugar beet is seen by referring to the figures for the fuel value per pound as expressed in calories. For the sugar beet we have 255 calories and for the pie melon entire, 98.

The distribution of the nutrients in the two foods in question is in about the same proportion. This is proved by the nutritive ratios (expressing the relation of the digestible protein to that of the remaining digestible ingredients) 1:6:3 and 1:7:0.

We must not forget though, that while the sugar beet is weight for weight a much richer food than the pie melon, yet the yield per acre of the latter may be so far ahead of the former that the net results per dry matter per acre would not materially differ; and certainly the planting and subsequent care and harvesting of the sugar beet is attended with more trouble than is necessary for the pie melon.

Again, we must bear in mind that the chemical composition of a fodder should not be our only guide regarding its value as a food. For instance, no one will deny that there is more nutrient, as shown by analyses, in hay than the beet or pie melon, still we know practically that better results will attend the feeding of a mixture of hay and pie melons than hay alone.

The succulency of the pie melon increases its nutritive value far beyond the rating which is given to it on the basis of the chemical analysis.

While we are fully conversant with the value, chemically, of the pie melon we are not familiar with its physiological action. When we are we shall be

able to more intelligently discuss the nutritive values of such materials as pie melons.

M. E. JAFFA.
University of California, Berkeley.

Meals for Dairy Cows.

TO THE EDITOR:—How do linseed oilcake meal, cottonseed meal and cocoanut meal compare as feed for milk cows? I am familiar with the analyses of them, but wish to know how they compare in practical feeding. Where can the two former be obtained in San Francisco? The cocoanut meal I have seen advertised in the PACIFIC RURAL PRESS, but not the others. Where can animal meal and poultry grit be obtained in San Francisco?—J. H. BARBER, Paso Robles.

TO THE EDITOR:—Commenting on the above letter, I would say that experience has shown that of the oilcake meals either linseed meal or cottonseed meal has yielded better results than cocoanut meal, the reason being that the last-named is liable to become rancid and thus affect the milk. Several cases of tainted milk have been traced to the use of rancid cocoanut meal. If this meal could be used in the fresh state, then no trouble would arise; but when kept for too long a time it is a very undesirable food for the dairy cow.

In making butter, cottonseed meal has proved more satisfactory than linseed on account of the latter tending to the production of soft butter, while the former yields a hard product. When manufacturing butter for export to hot climates, this is a point worth remembering.

Another point, in favor of cottonseed meal, when rationally fed, is that the protein is thus obtained at a less cost than when either of the other meals is used. For, as these meals are only used to insure a generous supply of protein in the ration, we can calculate upon the basis of this ingredient only, and consequently at the market prices the cost of protein, when fed in cocoanut meal, would be 5½ cents per pound; in linseed meal, 4½ cents, and in cottonseed meal, 3½ cents.

The linseed meal can be obtained at either the Pacific Oil & Lead Works or Eureka Oil Works, San Francisco. Cottonseed oilcake meal, when in market, can be purchased through any of the large commission houses; likewise regarding animal meal and poultry grit.

M. E. JAFFA.
University of California.

Poultry supplies of all kinds are advertised in our columns by Mr. Croley.

Small Silos.

Prof. F. H. King of the University of Wisconsin has sent to the Rural New Yorker a sample of corn ensilage made in a galvanized iron cylinder only 18 inches in diameter and 42 inches deep, and illustrates in a very forceful way how certainly good silage can be made if only the silo lining is airtight and the filling is done in the proper manner. This silage was made from flint corn planted very thickly so that few ears would develop, and it contained 32.6% of dry matter when put in. The corn was put into the can in small lots at a time, and was tramped continuously by a man who kept changing his position while the filling was going on, and so thoroughly was it packed that 163.65 pounds went in, giving a weight of 27.7 pounds per cubic foot. The surface was simply covered with two layers of acid and waterproof paper, upon which was laid a board, not fitting the circumference tightly, to hold the paper closely to the surface of the silage, but it was not weighted. In this way the cans stood during 178 days in the very warm, sunny and dry plant house at the Wisconsin Experiment Station, where the changes in weight were recorded every ten days during the interval. The amount of spoiled and injured silage on the top had a depth of 9 inches; all of the remainder was as good as that which was sent to you. In another cylinder, only 1 foot in diameter, but 10 feet deep, equally good corn silage was made and kept the same length of time under similar conditions. The amount put into the cylinder weighed 247.25 pounds, and the amount removed was 240.95 pounds, thus sustaining a loss of 2½% of the green weight.

Prof. King made similar trials with green oats just coming into milk, cut for hay to prevent clover being smothered, and with this difficult crop, during sixty days, the three short, broad cylinders which were filled sustained a mean loss of less than 5% of the green weight, and the tall one of only 1.4%. The loss of dry matter in these small silos in these cases was 4.69% to 10.93% of that put in for the period of sixty days, while the loss of dry matter in the interior of the corn silage, referred to above, during the 178 days, was 11.4%. These experiments demonstrate, first, that good silage can be made in very small and shallow silos, provided the walls are airtight, and the silage is very thoroughly tramped while it is being put in. Second, that when silo linings are airtight the necessary losses are small. Third, that thorough tramping of the silage at the time of filling, to expel at once as much of the entangled air as possible, is very important, and will amply repay for the necessary labor, even where the silos are deep.

THE POULTRY YARD.

Incubator Chicks and How to Raise Them.

D. N. Dodson tells the Otay Press how he has hatched chickens with the Petaluma incubator for two seasons, is well satisfied with the result and considers it a grand improvement on the old hen, in almost every way. The chicks are just as strong and healthy, and, if the proper course is pursued in rearing them, they will generally be ready for market in less time than the old hen frequently consumes. Again, in this section—San Diego county—you have doubtless observed that the chickens hatched by the hen late in the season are hardly as thrifty as those hatched earlier. We have seen no difference in incubator chickens in this respect, late chicks doing fully as well as early ones. We believe the trouble with the old hen's late chickens is caused from vermin, which are more numerous and aggressive in hot weather. Incubator chickens start out in the world free from these pests, and a very little care will keep them clean. These chicks are not so wild and are more easily handled, which is another good point.

There are many arguments in favor of the incubator, but the object of this article is to tell how to raise chicks after they are hatched. We have heard some say they could hatch them all right, but could not raise them. In such cases there has been mismanagement.

THE BROODER.—In the first place, don't try to raise incubator chicks without a brooder. If you feel unable to buy a brooder, make one, but don't give forty chickens to an old hen to herd and think you are making anything by the operation. She may be able to round up eight or ten of them in the fall, but if you had attended to them yourself there should still be forty.

Here is one kind of home-made brooder that any man can make, or woman either, if she can drive a nail: Get a box about 2 feet square and 1 foot high. Then another box about 10 inches wide, 10 inches high and 15 or 16 inches long. Knock out the bottom of the small box, then set the small box inside the large one, in the center, and with a pencil mark the size of the inside of the small box on the bottom of the large one. Then saw out an oblong hole in the bottom of the large box on the lines marked. Set the small box back in the big one and nail it fast. Invert the box and nail a couple of wooden strips across the hole. Now fill the space between the boxes with sawdust, smooth it level, then nail on some pieces of shakes or thin boards over the sawdust. Make a cover filled with sawdust to fit down inside the box closely, with a projection on all sides on top. Nail a leg on each corner of the box so that it will stand about 4 inches from the ground. Nail a board to these legs on the two sides; in the rear have a door reaching across hung with hinges; two pieces of leather or stout cloth will do for hinges. At the front tack on a strip of woolen cloth with slits cut up and down, so the chicks may run in and out at pleasure. Turn the box up and tack to the bottom a piece of woolen cloth, so it will bag down in the center within 2 inches of the ground, for a hover. Next take a five-gallon oil can, cut out one side of it, set it inside and your brooder is finished. When it begins to get cool in the evening pour in the can a teakettle of hot water. This will remain warm all night and till late in the morning.

Make a run, say, 2 feet wide and 8 or 10 feet long, 2 or 3 feet high, of netting, laths or boards, and, if cats or hens bother, put a cover on it, but provide for both sunshine and shade. We have one of these brooders at the Press office which we have used through two seasons.

Set the brooder in a dry spot on the ground, out of doors. Spread a heavy sheet of paper under it with sand scattered over it. Have the paper loose, so you can draw it out the door in the rear to clean it, which should be done every day or two. There are other kinds of home-made brooders, but none more easily made or easier to operate. But whatever kind of brooder you try to make, do not have the heat strike the chickens from below. Bottom heat is sure death to chicks inside of two weeks.

After three weeks in this climate no heat will be necessary. This size brooder will do for 100 chicks for the first three weeks. If you have another batch ready for the brooder, remove the first lot to another run, and get or make a box about 3 feet square and about 8 inches high, cut a wide hole in one side for entrance and tack on a strip of cloth with slits in, same as entrance to brooder. It is also well to have a cloth hover in this box.

FEEDING.—For the first feed for 100 chicks take one egg, put it in cold water and bring to boil till hard, then mash with a table fork as fine as possible, mix with half pint of stale—not sour—bread crumbs, add water or sweet milk just enough to make it soft and crumbly. That is enough for the first day. Dry oatmeal is also a good first feed. We then bake a cake as follows: Three cups corn meal, one cup wheat bran, one-half cup flour or oatmeal, one cup meat meal. Mix rather stiff with cold water, into which has been mixed four tablespoonfuls of vinegar

and two teaspoonfuls of soda. Bake and when cold crumble and feed all they will eat five times a day for the first week. After this feed with the above cracked wheat, cracked corn, shell, bone, etc. Keep a dish of charcoal where they can always get what they want. Have your runs covered with sharpsand and give plenty of green stuff—alfalfa, lettuce, cabbage leaves, etc. For a standard feed for chicks from three weeks to two months, take two parts bran and one of cracked corn, mixed stiff with milk—sweet or sour—if you have it; if not, use water; add a little salt and occasionally some pepper. About once a week mix in a teaspoonful of sulphur.

Keep clean, fresh water where they have free access to it without being able to get into it or get wet.

THE SWINE YARD.

Evolution of the Commercial Hog.

By ELIAS GALLUP of Hanford at the University Farmers' Institute at Tulare.

The commercial hog has undergone a great many changes since hogs were brought into the United States by the early settlers. The changes can be noted by any person who has visited the stock yards and meat markets of our large cities in the great Middle West, and watched the style of hog most in demand by the curer, the packer and the retail butcher. If there is a man in this assembly that lived in Indiana, Ohio and adjoining States in the early days he will remember that the leading interest with nearly all the farmers was the rearing of swine. He will undoubtedly remember how hogs then looked. They were generally long-legged and muscular, of every shade of color imaginable, the prevailing color being black and white, with occasionally a blue or gray, and quite a percentage of them some shade of red. Between the extremes of pure white and jet black there was every variety of spotted hog imaginable. In those days a hog that would dress 175 to 200 pounds at one and a half to years old was considered profitable.

WAY THE OLD HOG SUITED THE OLD TIMES.—There was no effort made to improve the stock, for two reasons: First, the hog suited the style of farming prevailing, and, second, there were difficulties in the way which made it next to impossible to improve the race if the owners had desired to do so. The hog the farmers needed in those days was one that could live in the woods on mast and roots and combat with the wild animals that lived in that locality until fattening time, and when fattened transport his own carcass a hundred miles or so to market. It was a matter of indifference to the farmer whether it took twenty or thirty bushels of corn to fatten a hog, for there was no market for corn except at the country stillhouse, or a distant city market, to which the corn must be hauled over muddy roads, as railroads, canals and turnpikes were still a thing of the future. A hog that could condense a quantity of corn and carry it to market and bring a few dollars was a godsend to the farmer.

What were the obstacles in the way of improving the hog? First, want of facilities for transportation. There were no pure herds west of the Alleghenies, and to send to this distance for stock when there were no railroads or express companies was out of the question. Upon the advent of the railroads good stock was brought in and the commercial hog underwent a great change from the above described hog, to a large hog that filled the pork barrel quicker. Thirty years ago the hog that filled the barrel quickest was the best hog to raise and gave the best returns to the breeder, the feeder and the packer. They had the big hog on the brain. Every neighborhood had one which the local press glorified as a bigger hog than any other big hog. That part of the hog business, to use a slang phrase, is played out. The next change was a hog of lighter offal and when fat a perfect tub of lard.

THE HOG OF TO-DAY.—That hog went with his illustrious predecessors and in his place came the commercial hog, good for the feeder because he can be put on the market early and good for the curer or the butcher, because he will furnish the grade of meat which is in demand by the public. You will naturally ask for a description of such a hog and want to know the breed to which he belongs. He is of no particular breed and may be any one of those claiming favor. The butcher who supplies his customers with fresh pork refers to this hog as a block hog—that is, the hog that will cut up best on the block and furnish the most desirable class of meat to his customers. The curer calls this kind of hog the bacon hog. He is the hog which will furnish the best cuts of bacon for curing, with good hams and shoulders. Now, you will agree with me that the packers' bacon hog and the butchers' block hog are very similar in make-up. This animal is of medium weight, anywhere from 200 to 250 pounds, rather long-bodied, good, well-rounded back and the bulk of the meat being carried above the center of the body. His

back will be broad and straight, while his bottom line will be equally so. His hams should be large, the meat carried well down to the back, and the legs straight and well set under him. He has more bone, or a different bone from the lard hog of fifteen years ago. It is very important that he should have the proper kind of bone, for he often has to be taken miles to market, either on foot or in cars, and it is not desirable for him to arrive at the market a cripple. He is an active hog as compared with his predecessors twenty years ago, looks like a rustler and evidently has a good deal of muscle mixed with his fat. His head is rather small and his nose not too long and coarse; he has good feet, a good coat of hair, stands square on his legs and has an independent look, which plainly shows that he is to-day the favorite. Now, that is the commercial hog—that is the popular hog in this country, as well as in other places, at the present time.

SIGNIFICANCE OF BONE.—In the description of the ideal commercial hog I have said that he has different bone from hogs raised several years ago. You may ask to what extent does bone signify strength? The quality, strength, is demonstrated through the formation of the bones and joints. A large bone signifies coarseness of grain, openness and softness and such a bone if sawed will have the appearance of a sponge, open and porous. The smaller the bone the finer the grain, the more solidified the minor portions, the more hard the outside and in proportion to its size a bone of this formation will support twice the weight and do it better than a large coarse bone.

A hog with a weak leg and a poor foot is not a profitable hog for the feeder, for when a hog's foot is sore and he is lame he does not fatten or grow, hence the importance of having good feet and strong flinty bone in our commercial hog. The butcher has no use for ten or twenty pounds more of bone to each hog. Large, coarse, spongy bone has had its day it is not wanted now by anyone. The experiment station has conclusively proven the fact that the bone of the animal can be hardened, strengthened and improved by the food given. Bone meal can be fed to hogs in some instances profitably and is recommended by some, but wood ashes will answer all purposes and can be had mostly without any outlay of money.

During the first few years of our experience in raising pure-bred hogs we were troubled with poor feet and legs and they would break down when fed to a heavy weight. Put the bone material in the feed and it will appear in the bones. Coarseness of bones indicates slow growth, late maturity and an inferiority of flesh.

WHY BETTER HOGS SHOULD BE CHOSEN.—I have pointed out to you what I consider the kind of hog to raise to meet demands of the market and I would advise you to fall in line and raise better hogs; the hogs that fill the bill bring the most money. But the beauty of improved swine breeding, as a general lesson at least, is in the very fact that it necessitates a new order of farming. It does not travel in the old ruts of the past and deem it snobbishness to strike out in a new line of action. It takes study, care and exactness—important factors for success. It condemns at the outset the old slipshod mode of treating hogs as if they were nothing but brutes devoid of all sensibility and likely to give their owners as good profits by one system of treatment as another. It shows that hogs bred with the greatest care and according to natural laws are worth much more than common hogs raised and bred on the old system, half starved with no attention to pedigree or points and no recognition of the law that like begets like. It leads to thought, study, investigation, observation, a knowledge of the history of the different breeds, the effect of shelter, exposure, good or bad treatment and a thousand other topics that come up for discussion when intelligent swine breeders get together or measure swords with each other in some well conducted paper devoted to their interests.

VITAL FORCE NOT LOST.—There are some men who are always saying that we are going too far away from the scrub, that in consequence of this departure our hogs are lacking in vitality. They make one have a tired feeling because of their incessant talk about the improved breeds being inbred and not having the constitution or vigor of a few years ago. To their minds the vitality of the razorback is the one thing needful. They do not seem to take into consideration that the Poland-China, Berkshire and other modern breeds have improved, from requiring two or three years to mature or reach the pork market, so that it takes only six to eight months, making a gain of assimilation of 25% from corn and other feed given to them, which does not show a lessening of vitality or vital force.

LINE BREEDING AND IN-BREEDING.—The improvement of our commercial hog has come, to a great extent, from line breeding, which to a limited extent is in-breeding. I am a strong advocate of line breeding for various reasons. Those who have practiced line breeding are the ones that have produced the show animals; and you all know that it requires constitution and vigor to be a good show hog. The veteran breeders of Shorthorn cattle in England—Charles and Robert Collings, Thomas Bates and Thomas C. Booth—by their process of in-breeding proved to be the most successful breeders of the most famous breed of cattle the world has ever known. It would make some

men feel faint to go into my office and examine the pedigrees of the great Poland-Chinas, the noted hogs of the day.

This talk about the Poland-China and Berkshire losing their constitution because in-bred is all humbug. There never was a hog with a better constitution than the Poland-China of to-day. They have more life and action than they had twenty years ago and are still improving. Now, I am well aware that there is a strong prejudice against line breeding, but everyone does not know why they are so prejudiced. I am willing to fall in line with the great breeders of the day.

The intelligent fruit raiser grades his fruit and puts it on the market in neat, clean boxes—why? Because it pleases his customers and brings more money. The man that raises pigs should have them of uniform size and appearance—why? Because they bring more money. You all know that we are not raising hogs for fun.

THE BACON HOG.—We have been told that the modern breeds of swine are not the kind of hogs needed for bacon. There is no reason for such an assertion. Even our worthy Secretary of Agriculture, Mr. Wilson, said we should raise Tamworths to supply bacon for the English market. The American hog raisers are willing that Canada and Denmark should supply the English with small bacon. As for the farmers of the United States going back and raising the long-nosed, light-hammed, slow-maturing Tamworth hog, they will never do it. It would be an insult to those veteran breeders, D. M. Magie, David Finch, C. W. Jones, Perry Hatfield, John Gilmore and others who by intelligent care and selection have produced the greatest hog on earth, the Poland-China.

The American people are not a class of people that ever think of going backwards—a class of people that have licked Great Britain twice, and in a short space of time conquered and destroyed the army and navy of one of the oldest and most powerful nations of the globe, and by so doing extended their territory nearly around the world. The United States is the greatest hog producing country on the face of the globe. It is an industry that represents millions of dollars annually. It has performed its full share in the growth and prosperity of the nation. The people of the United States will never go back on the hog—the great commercial animal of the world.

THE VINEYARD.

Frosted Vines and Their Treatment.

TO THE EDITOR:—I noticed a query in your last issue, and as I have had some experience in that line, I believe I can answer it satisfactorily. The best plan which I followed years ago was to cut off the frozen shoots close to the old wood, instead of pulling them off, which latter process often injures the dormant buds. As every grape grower knows, or should know, at least, every joint of well developed wood produces triple buds, the principal bud in the center, which starts first, producing the main crop, and a small or reserve bud on each side. If nothing interferes, the main shoot will produce the crop, and the reserve buds will remain dormant, or make but a feeble growth, and should be rubbed off. But, if the main shoot is frosted and is promptly cut off, the reserve buds will start and often produce a fair crop. If the frosted fruit remains, it is apt to vitiate the sap and affect the whole vine, about the same as we see it in the Eastern pear and known as "frozen sap blight."

In cases of severe frost, however, when the wood of last season is affected, this is not sufficient. The vitiated sap will bring what we know as black knot, an excrescence just above the ground. The only remedy in this case is to cut off the vine below the surface and graft it with long scions of medium thickness which also have fruit buds. I practiced this in 1887, when a piece of Zinfandel, which is a very tender vine, anyway, was badly frosted. The vines were five-year-old, about 1½ to 2 inches in diameter. I grafted them below the head with Semillion scions 16 inches long, two to the vine, whenever strong enough. They took readily, about 95% growing, and I made a fourth of a crop from them that year from the upper buds and a full crop the next year. I have not had a trace of black knot on these vines since. The buds on the scions acted in place of the top cut off to elaborate the sap, which was flowing fast at the time.

But both operations should be performed quickly to do any good. We spent a week in the vineyard cutting off the frozen shoots, outside of the Zinfandel, and were rewarded by a crop of three tons to the acre from the dormant buds of the finest grapes I have ever seen, high in sugar and easy to ferment.

This is practical experience, and, though it may come too late this season, may be a hint to your readers for next year, if frost should strike some of them again.

GEORGE HUSMANN.

Napa.

Agricultural Review.

ALAMEDA.

HARE ASSOCIATION INCORPORATED.—Alameda Argus, April 20: The California Belgian Hare Association has been incorporated with a capital stock of \$25,000. The directors are W. M. Rank, F. W. Van Sicklen, R. B. Mitchell, J. A. Percy and G. H. Mastick. William Young is manager.

BUTTE.

GRAIN SACKS MADE FROM FLAX.—Oroville Register, George Thresher presented to us a sample sack made from hemp grown on the Heaney place, near Gridley; also samples of twine and bleached cloth. The sack is more than twice as strong as that made from jute, tests being made by filling it with grain and then dropping from given heights. The twine is very strong and durable. Mr. Heaney said sacks can be made of hemp and sold for the same price as jute sacks are sold for.

SPRAYING OUTFIT.—Gridley Herald, April 21: C. W. Thresher has added to the equipment of his orchard a new spraying outfit. It consists of a two-wheeled cart carrying a 150-gallon tank, on which is a force pump. The pump is run by a link belt which is driven by a sprocket wheel attached to the wheel of the cart. Two nozzles are attached to the tank and the spray is forced through them. The team is walked sharply and the spray is thrown onto the tree while going along. Mr. Thresher is using London purple to prevent damage to pears by codlin moth.

IRRIGATION PAYS.—Among the orchards along the Feather which have been inspected, that of Cutts & Hudson, known as the Riviera orchard, has the largest showing for a crop. The almond trees are loaded with nuts, pears are a big crop, peaches are good and prune trees are bending under what will be a heavy yield. The apricot trees have a fair crop, while other apricot orchards are barren of fruit. The orchard was irrigated thoroughly last year and this season's showing is probably due to care given the trees last year.

FRESNO.

BEE KEEPERS' SUPPLIES.—Selma Enterprise, April 19: J. F. Crowder purchased 4000 cases for the California Bee Keepers' Association at 59 cents. Last season the bee men paid 75 cents per case.

LOS ANGELES.

WALNUT GROWERS MEET.—Los Angeles Herald, April 19: A meeting of the Walnut Growers' Association of southern California was held yesterday. Ventura, Santa Barbara, Orange and Los Angeles counties were represented, about thirty members in all being present. President W. H. Spurgeon of Santa Ana presided. The meeting was called for the purpose of taking concerted action toward marketing the coming season's crop of nuts. An agreement to work together for mutual protection was formulated and Secretary J. A. Montgomery of Rivera was instructed to have a number of copies printed and sent to each association. The Association is arranging to purchase the entire quantity of bags to be needed by the members for the coming season in one lot, and it is expected that 70,000 bags will be required for this year's crop. The next meeting is to be held at Santa Barbara, Thursday, May 10.

NAPA.

FRUIT COMPANY ELECTS OFFICERS.—Napa Register, April 20: At the annual stockholders' meeting of the Napa Fruit Co. this directorate was chosen: A. D. Butler, president; W. H. Atkinson, vice-president; E. E. Cook, secretary; Leonard Coates, treasurer, and F. W. Bush.

PLACER.

EARLY FRUIT SHIPMENTS.—Newcastle News, April 18: Shipments of strawberries are being made daily. George D. Kellogg made the first shipment of cherries from Newcastle this season on the 14th

inst. They were Purple Guignes and consisted of two boxes. This variety has been coming in during the week, but will soon be replaced by Knight's Early Black. The hailstorm of ten days ago injured no fruit in this vicinity. The heavy frost of the 18th inst. is reported to have done much damage in the vicinity of Loomis. On the Whitney tract in low places the fruit was blasted, and other orchards were severely frost bitten. Around Newcastle the damage does not appear to be great. Some orchards have suffered somewhat, but on the whole the growers report plenty of fruit, and it is safe to predict that the crop will be larger than last year. Hale's Early and Alexander peaches are said to be light, but other varieties promise well.

SAN DIEGO.

WATER APPROPRIATION.—San Diego Union, April 19: T. B. Hartzell has filed a notice appropriating 500,000 inches of water in the New river, at a point where it crosses the Mexican boundary. The water is to be used for power and irrigation of lands in this county.

BIG CROP OF LEMONS.—R. H. Young, of the firm of Young, Pbinney & Co., is authority for the statement that this county will have the best summer crop of lemons this year that it has ever had. There was no cold weather this winter to freeze the fruit, as was the case last year, and, consequently, all the fruit is still on the trees and will be matured if the water supply holds out. Last year's cold weather also retarded the growth of the fruit and made it a poor quality; this year there will be nothing of that kind, unless there is a cold spell later on, and that is not expected. It is seldom that this county has any cold weather after April. The drouth has had a tendency to make the lemons mature later, but, as the late lemons bring the highest prices, this is regarded as a blessing.

WATER COMPANY SUED.—San Diego, April 17: The contest to compel the San Diego Flume Co. to furnish water in dry years by pumping, without an extra charge, has culminated in an action brought by consumers in El Cajon valley, asking that a receiver be appointed for the extensive system of water works which was built eight years ago and cost over \$2,000,000. The company has three reservoirs, 36 miles of flume and about 15 miles of pipe line. It has contracts with consumers which specify that in years of normal shortage of rainfall the water supply shall be proportionately reduced. During the last two years practically no storage has been made on account of the light rainfall, and the company has installed pumps and dug wells in the San Diego river to keep trees alive, charging 5 to 7½ cents per 1000 gallons. The consumers object to paying, hence they ask for a receiver.

SAN LUIS OBISPO.

RAVAGES OF FROST.—San Jose Mercury, April 18: According to Vice-President Henry of the Cured Fruit Association, who returned yesterday from a visit to San Luis Obispo county, frost has made sad ravages among the crops in the lower end of the Salinas valley. He says the entire prune crop of San Luis Obispo county—about 2000 acres—has been destroyed. The damage was greatest in the stretch of the valley lying between Chular and Paso Robles. Practically everything but the apple crop will be a total failure in that particular section.

SAN MATEO.

RECLAMATION WORK.—S. F. Chronicle, April 18: At the recent election in Reclamation District No. 543 E. B. Pond of San Francisco and Arthur L. Whitney and W. P. A. Brewer of San Mateo were elected trustees for two years. The work which has been going on for two years is about completed. Forty-five hundred acres lying between San Mateo and Belmont have been reclaimed. About \$25,000 have been spent in the construction of levees. Plowing the marsh has commenced and will be prosecuted by horse power and improved steam plows. It will double the cultivable land in the vicinity of San Mateo.

SANTA BARBARA.

TIMELY RAIN.—Los Olivos, April 22: One of the most timely rains in the history of this district began falling here Friday afternoon, and has continued at intervals until this morning. Farmers had generally lost all hope of a crop and would have been content with a short crop of hay. The present storm will assure hay on many ranches and with more rain later there will be grain to thresh.

SANTA CLARA.

AGRICULTURAL SOCIETY REORGANIZED.—San Jose Mercury, April 20: The transition of the Santa Clara Agricultural Society from a co-operative to a regular stock corporation has been practically ef-

fect. Articles of incorporation of the Santa Clara Land & Exhibit Association, which is the name by which the society expects hereafter to be known, have been filed. The capital stock of the new concern is \$100,000, with the value of each share fixed at \$200, and the names of George Y. Bollinger, James W. Rea, A. C. Darby, W. A. Parkhurst and Paul P. Austin appear as the first board of directors.

SOLANO.

NEW HARVESTING MACHINERY.—Dixon Tribune, April 20: Many new harvesters are being bought. It appears that this is necessary with most of our farmers, as the old machines have been in use ten or fifteen years and are becoming worn out.

SHOULD ALMOND TREES BE PRUNED?—Suisun Republican, April 20: W. G. Read, the extensive almond dealer of Colusa, has been in Suisun valley investigating the crop prospects. Mr. Read, having made a thorough study of the almond industry, has come to the conclusion that almond trees should be pruned the same as other fruit trees. He told of having seen almond trees, upon which other stock had been grafted, produce immensely from a single branch that had been left on the tree to give it strength. If Mr. Read's theory is correct, it would pay orchardists to experiment with at least a few of their trees.

STANISLAUS.

WAREHOUSE COMPANY INCORPORATED.—Modesto Herald, April 19: Articles of incorporation of the Crow's Landing Warehouse Co. have been filed. Stock has been subscribed by the following persons: B. H. Crow, J. T. Crow, O. P. Munson, J. B. Crow, H. C. Tucker, Frank Munson, C. H. Nicewonger, Samuel Moorehead, W. E. Bell, Wm. Munson, C. P. Crow, J. R. & M. E. McDonald, Frank Crow, J. A. Crow, J. P. Barnes, A. Van Winkle, G. H. Crow, F. D. Stanley, John W. Sharp, W. F. Fink, L. C. Elfers. Messrs. J. T. Crow, C. P. Crow, W. D. Bell, O. P. Munson and H. C. Tucker are the directors.

SUTTER.

THINNING FRUIT.—Yuba City Farmer, April 20: The fruit thinning season has opened and while peaches are not so thick on the trees as last year there will be considerable thinning to do in some varieties. Orchardists should see that the fruit is well thinned, and they will get larger fruit of a better quality and save the trees from over-bearing and breaking down.

UNPRECEDENTED GROWTH OF GRASS.—The growth of grass and clover in the neighborhood of Vernon, and on both sides of the Sacramento river as far as the eye can see, is unprecedented. Supervisor Burns says that in the many years he has lived here he has never seen such feed as his range affords. Clover is 2 feet or more high; grass, grain and oats are waist high.

TEHAMA.

HEAVY YIELDS.—Red Bluff News, April 19: W. E. Hazen of Manton reports that his apple trees never looked as well as they do to-day, and he expects to sell three times as many apples this year as ever before. His pear crop is so heavy that he will be compelled to thin out two-thirds of the young fruit. He says that his neighbors are equally as well favored as himself, and the great amount of fruit which will come from Manton will surprise all the growers and shippers. The quality will be as favorable as the great yield.

BIG DAY'S SHEARING.—There was an organized crew of sheep shearers in town Tuesday which probably is the speediest crew of ton shearers in the State. They all use the steel shears. On Monday they sheared, in nine hours, 1021 sheep for John Harvey. Henry Watson led the list with a record of 125 sheep. The other nine shearers are no laggards, this being their totals for Monday's work: Lucania Ayala 107, A. Arillanos 105, T. Knight 104, L. Valencillos 104, Juan Gonzales 98, A. Guterias 97, M. Montez 95, S. Peralta (foreman) 93, and J. M. Bufanda 93.

TULARE.

FRUIT OUTLOOK.—Visalia Times, April 19: The fruit outlook in this county is better than it has been for years. There will be a full peach and pear crop, and nearly a full crop of apricots. The only variety that seems to be scarce is prunes. It is too early to tell just what the prune crop will be, as prunes drop badly, but there will not be as many pounds barvested as there were last year. In the citrus belt the season has been especially favorable and the crop will be large.

YOLO.

FRUIT ASSOCIATION INCORPORATED.—Woodland Mail, April 20: Articles of incorporation of the Rumsey Co-operative Fruit Association have been filed. The

capital stock is \$5000—250 shares at \$20 each—of which \$2000 has been subscribed. The directors are E. F. Haswell, J. L. Kellogg, G. A. Farish, L. F. Borden and G. E. Fletcher. The following are stockholders: J. O. White, E. J. Campbell, Chas. Stone, J. M. Morrin, H. A. Hoggson, F. W. Travis, Harry Jones, J. J. Madden, Wm. Chartress, G. B. Jones, D. W. and G. H. Stratton, Leon B. Platt, A. Lands, G. O. Farish, Leonard North, W. G. Latimer, J. O. Evans, Wm. Higdon and I. Nicholas.

FRUIT CROP SHORT.—Woodland, April 21: At a meeting of the Board of Horticulture reports were received from which it appears that the fruit crop will be short all over the county. This is especially true of almonds. Last season the Davisville Association shipped 250 tons from 2000 acres of trees. The prevailing opinion is that not more than 100 tons will be shipped this year. There will be about half a crop of Tragedy prunes and an average crop of French prunes. Early shipping peaches will be short, but there will be a fair crop of late varieties. The apricot crop will be larger than any other fruit.

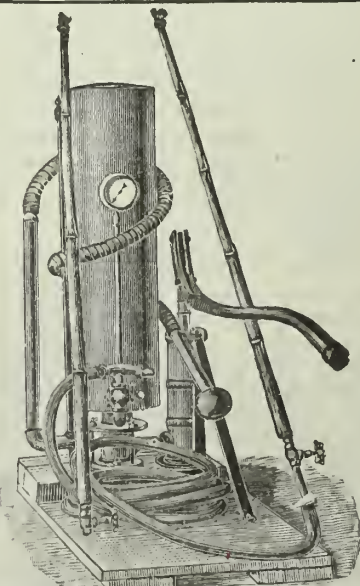
The Future of Children

A child's life may be blighted by the diseases of youth, such as Rickets, which is characterized by weak bones or crooked spine, and inability to stand or walk steadily, or Marasmus, that wasting disease characterized by paleness and emaciation, or Scrofula, a constitutional disease of the glands and neck.

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THE HOME CIRCLE.

Manhood.

Man is great, and he alone,
Who serves a greatness not his own,
For neither praise nor pelf,
Content to be and be alone,
Whole in himself.

Strong is that man, he only strong,
To those well-ordered will belong
For service and delight,
All powers that in face of wrong
Establish right.

And free is he, and only he,
Who from his tyrant passions free,
By fortune undismayed,
Has power upon himself to be
By himself obeyed.

If such a man there be where'er
Beneath the sun or moon before,
He cannot fare amiss;
Great Nature hath him in her care,
Her cause is his.

—Owen Meredith.

Sequoia.

Lofty above hot stretches of the plain,
Above the sea, and beetling cliff, lone
sage!

Thoudweldest in hesternal heritage,
And wisely countest life enduring gain.
A sarn thou art to us, a wondrous chain,
Out-reaching far from Earth's archaic
page;

An only pilgrim from stark glacial age,
Or heirloom rescued from Atlantis'
reign.

Noble thy column stands, thy crest un-
bowed,

In spaces where holy organs peal,
And where eternal harmonies are rife.
O would that I might rise above the
cloud

Like thee! Above the moil, unto the
weal,
And nobly use my puny lease of life.

—Mary H. Coates.

O Absalom, My Son!

Colonel MacDonald felt an icicle strike through his heart when an orderly dashed up with a command from the general to charge the ditch. It was not that the smallest drop of cowardly blood had a place in his veins. Indeed, he was possessed of that cool and dogged order of courage which cuts the deepest havoc in a long and stubborn battle and which fights bravely on after the volcanic fires of more impetuous natures have expended their forces in spectacular slaughter or gone down in glorious extinction. To send such a man as Colonel MacDonald into such a charge as this was one of the grotesque blunders to which the madness of battle gives birth. Far better would it have been to send a dashing, hot-headed man, a man with blazing eyes and a wild shout in his throat, into that awful, quite maelstrom of reserved lead, where the noise and flame of courage would sweep the field.

It was not that Colonel MacDonald feared for his life; but he knew the quality and temper of his regiment, which were his own infused. In the famous corps to which he belonged his regiment was accounted the mainstay, the rock against which furious charges dashed themselves to pieces, the pivot upon which rout was swung around to victory. It was a wall, not a hurricane; an immovable iceberg, not a boiling torrent. How would it behave in this new and strange emergency? A stayer and the panic of others, how would it handle a possible panic of its own? A dam to restrain the flood, what incoherency and disorganization might it develop as the flood itself?

The odds against Colonel MacDonald were tremendous. The enemy, securely intrenched, outnumbered him fearfully; but it would still have been many times stronger had it had but a fourth of its numbers. Between his position in the trees and the yellow line of earth marking the enemy's ditch, a mile away, was a perfectly level field, recently planted—a pasty soil deeply plowed and made soft by rain. It was an infantry regiment that had been ordered to charge the ditch across that field. The necessary slowness of the

progress, the exhausting labor of it, as the men would sink nearly to their knees at every step; the total impossibility of making a dash, the deadly aim that the enemy would take as it waited in perfect security until the whites of the charging men's eyes could be plainly seen—the whole ghastly picture swept the colonel's mind.

And there was another thing. The complexity of the human heart is unaccountable. The bravest soldier may at one time face death with the resignation of a stoic or the recklessness of a battle-drunk madman, and at another quail when the shadowy pictures of a loved and suffering one thrusts itself between him and his leaden destiny. At times there are causes vastly more potent than the fear of death to cool the hot iron in a soldier's heart; there are transitory moments of suffocating, honest, manly doubt whether it be nobler to die for one's country or live for the sake of cherished hearts whom one's death would rob of life without satisfying the grave. Not an hour ago Colonel MacDonald had held in his arms his wife and his one child, and he felt their sacred tears where he had permitted them to dry upon his cheek. They were so near yet—these two loved ones—and how unthinkable it was that they should see him—either an impotent heap of breathing flesh, or riddled into—

In spite of his masterly composure the colonel stared in dumb astonishment at the orderly.

"Is the general aware of the character of the ground over which I am to charge?" he inquired, with a strange hesitation.

The orderly looked surprised. "He said nothing about it, colonel," he answered.

"I suppose," resumed the colonel, speaking with great slowness and calmness, though unconscious of his words, "I suppose the general has ordered meanwhile a flank attack on the ditch—round through the woods there to the right—to send an enfilading fire into the enemy while I charge."

"That is impossible, colonel; there are no troops nor batteries for the purpose."

The colonel stared so strangely at the orderly that the brisk young man wondered. An embarrassment that he felt without understanding caused him to lower his glance, as though he too shared the unconscious guilt of the blunder. Then wheeling his impatient horse, he asked:

"I shall tell the general—"

"That I will charge," answered the colonel quietly.

The orderly saluted and galloped away.

The scene had been witnessed by the whole regiment, lying on its guns and idly listening to the shells that tore screaming and bursting through the woods, and by something akin to unanimous intuition it divined the purport of the order, though it had been heard only by the colonel and his aides. The men were veterans, seasoned, cool, self-contained; but their glances met all down the lines in a kind of a dismay that had no words for its expression.

Then at once orders were bearing the message of death, and the musical notes of the bugle sounded clear and round above the diapason of the singing shells in the trees. The colonel, with drawn sword, galloped to the front, turned, faced his men, and without a word raised his sword aloft, wheeled about and headed slowly for the ditch. In that brief moment his men saw a deep pallor that they had never found there before, but behind it the familiar quiet gleam of the eye that meant steadfastness to the end. That was what they wanted, what they had never failed to find when the crisis came; and taking it into their hearts, they sprang forth from the sheltering trees into the open.

They took the soft earth bravely at first, going at a double quick, but the colonel checked them and passed the order down the line that they should move slowly. His purpose was to reserve their strength until the glinting barrels of the enemy's rifles and the cautious upraised hats above the earthworks showed that a deadly

aim was being taken; and there was time enough for that. Far to the left the battle roared, and Colonel MacDonald, holding the extreme right, knew that a heavy responsibility rested upon him. Should his regiment be swept away his general's right would be turned, for concealed in the woods beyond the enemy's trench were batteries awaiting the opportunity that the intrenched regiments would open.

Half the distance across the field had been covered, and as yet not a single puff of smoke had risen from the earthworks. Even the batteries in the woods were silent. Colonel MacDonald's men trudged slowly forward, in perfect order, their glinting rifles showing lines as straight and firm as on a holiday parade. Another quarter of a mile had been covered, when all along the line of earthworks rifle barrels began to slip over the top, and here and there a hat was uplifted above the yellow crest. The colonel faced his men—a splendid target for the enemy, but sitting in massive non-chalant disregard of the fact. Gathering up the reins after calling a momentary halt, he galloped down the line, and in a few words sent the iron of his soul into the souls of his men. Then came the dash, the men crouching low as they floundered on through the mud.

First came a solitary greeting shot from the works, then another, then a blazing, tearing crash that sent forth a flying wall of lead. Men dropped by the score, but there came not a groan from the hurt and the dying, not a shout nor a shot from the living. The colonel passed on waving his sword aloft. The officers of the line followed his example; but the men stood weighted in their tracks, transfixed by an unspeakable fear, staring in terror at the invisible death lying in wait to throttle them after the short lull from the enemy's reloading had ended. Thus had the glory of the famous regiment gone down in disgrace in a new and awful situation. Shouts and implorings from the officers failed to move the men. Stinging reproaches for their cowardice brought no quickening of their pride. They stood gazing helplessly at the yellow dam over which the river of death was pouring. Then came a wavering, a shiver from end to end of the line. Glances were turned backward toward the sheltering trees, a few rifles were dropped and the beginning of what would have been the most shameful rout in the history of the war was at hand.

But a wonderful thing occurred. Those looking backward toward the sheltering forest saw a small child tearing toward them from the rear, galloping furiously on a small nimble pony; and they recognized in the on-comer the colonel's little son Robert, whom he and the men of the regiment called Tod. In what manner he had escaped from his mother, how he had followed and found his father—these are not things to discuss while the hearts of 700 men are turning to water in dread of another winged wall of lead.

Dashing through the wavering ranks the child drew up at the side of his father, so maddened by the failure of his men and so urgent in his appeals to their fealty that he had not observed the child's approach. To see his son here at the most wretched of all the moments that could occur in ten thousand lives put upon the colonel's strength the very last strain that it could bear. Not heeding the flaming cheeks and dancing eyes of the child, nor the exaltation and the limitless affection that filled their wide blue depths, the colonel harshly ordered a mounted officer to take the boy to the rear; nor would he permit his agonized heart to comprehend the look of mortification and grief that dimmed the glowing luster of the childish face up-turned to his.

"Papa!" pleaded the little man, "don't send me back. I want to go where de men has de bees dat sings in de air. Dey was singin' all around me when I was widin' froo de field." Please, papa!"

At that moment a second flying wall of lead swept the open. The horse of the officer who had seized the pony's

bridle dropped under him. The little man, seizing the moment of freedom, sent his whip into the pony's flank, and the nimble beast leaped ahead toward the yellow line. The colonel dashed after him, and the other officers who were mounted; and the paralyzed soldiers seeing the child leading the charge, and swinging his whip, and shouting in his childish, piping voice to come on, felt the old fire boiling in their blood, the old iron in their souls. With a mighty shout they stormed the works, and the glory of the carnage of their bayonets in the ditch surpassed all reckoning. On they swept over the

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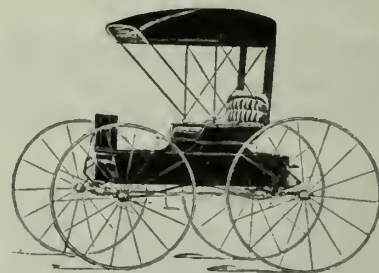
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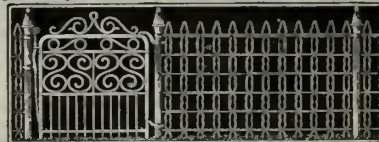
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EARS OF CORN

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choked ditches, filled with the regiments they had crushed, on to the battery in the woods, which they captured; and that is the story of the wonderful charge that turned the enemy's left that day.

After the din had ceased, while yet the air reeked with the grime of burnt powder, a white-faced man galloped along the line, searching through the haze with a frenzied eagerness for something—something infinitely precious. What saving of a paltry nation's cheap honor could compensate for one overwhelming, unthinkable loss?

The gleaming, eager eyes at last found what they sought. The childish bare, curly head was pillowed on the dead pony's neck, and a childish arm was carelessly thrown over the dead pony's head. The flaming roses were gone from the velvet cheeks and the wide, blue eyes, whose last look upon him had been one of bitter disappointment and reproof, were closed. The wretched man, mastering a choking sob, approached his boy and took him gently in his arms. The blue eyes opened, stared vacantly a moment, and then lighted up with a happy recognition when their glance fell on the colonel's face. A turbulent joy bound the strong man's tongue in chains.

"Papa," cried a childish voice, "is dat you? I'm so glad! I'm tired, papa. Can't you get yo' Toddy boy some water? Oh, dere was so many, many bees, and dey singed and singed, an' one o' dem naughty bees, he bit yo' Toddy boy wight here"—indicating a small, blood-soaked shoulder, from which a small arm dangled helplessly—"an' it hurted, but yo' Toddy boy didn't cwy."—W. C. Morrow.

The Right Kind of Head.

Everybody has heard of President Lincoln's reply when asked the question, "How long ought a man's legs to be?"—that he had "always thought that a man's legs ought to be long enough to reach from his body to the ground."

Somewhat similar was the answer given by a Western farmer who went to town one windy day in March. Seeing several men chasing their hats along the street at a considerable sacrifice of dignity, he remarked—

"If them fellers had the right kind of heads they wouldn't have no such trouble as that."

"Do you have the right kind of head, uncle?" inquired a bystander.

"Yes."

"Don't your hat never blow off?"

"Never."

"Well, what is the right kind?" he was asked by several.

"Why," rejoined the farmer, "the right kind of head is one that you can push up into a hat far enough to hold it on tight."

Baden-Powell's Joke.

The officers of the Mafeking garrison were at mess—and what a mess!

"Cheer up, lads," remarked Colonel Baden-Powell, taking his second helping of mule steak. "We might be worse off."

"Indeed? I can't imagine it," growled the dyspeptic major.

"Well, just fancy our diet if the automobile had been introduced here."—Collier's Weekly.

"WHAT is a furrier, Tommy?" asked the teacher of a pupil in the juvenile class.

"A man who deals in furs," answered Tommy.

"Now, Tommy, you may tell me what a currier is."

"A man who deals in curs," was the unexpected but logical reply.—Chicago News.

"I WOULD go with you to the end of the earth," he asserted passionately. "Not with me, you wouldn't," she replied coldly. "Why not?" he demanded. "For two reasons," she answered. "One is that I'm not going, and the other is that there isn't any." When one meets the prosaic new woman, one has to be careful what he says.—Tit-Bits.

The Pebbles' Lesson.

How smooth the sea beach pebbles are!
But, do you know,
The ocean worked a hundred years
To make them so.

And once I saw a little girl
Sit down and cry
Because she could not cure a fault
With one small "try."

Billie Fairfield's Promise.

When Billie took the milk to Mrs. Selden one morning, and she asked him if he would bring another quart that night, he said, "Yes'm" promptly, and then never thought of it again until he was in bed.

"Well, I can't take it now," said Billie; but he could not go to sleep, though he turned and tossed and twisted till he was tired. At last he went to the head of the stairs, and shouted, "Mother!"

"Mrs. Fairfield had just threaded her needle and stretched a stocking with a big hole in it over her hand. She said, "Oh, dear!" but she went to see what Billie wanted.

"You'll have to go now," she said quietly, when he had told her.

"O mother! I can't go away up there alone." Mrs. Fairfield knew that, for Billie was never out alone at night. His father had gone to bed downstairs with the baby; and, if they waked him, baby would wake, too. So Mrs. Fairfield thought a minute. Then she said: "We'll see. I'll have the milk ready when you come down."

When Billie got into the kitchen, his mother stood at door with her hat and shawl on. Billie began to feel ashamed. He wished he dared to go alone; but he did not, for it was a lonesome road. He took the milk, and they tramped over the snow up the long hill without a word. The wind blew in their faces, and Billie's ears were cold; but he had the milk can in one hand, and pulled his sled with the other, so there was no way to warm them. He was ashamed to ask his mother to take the milk.

Mrs. Selden exclaimed when she opened the door: "Why, what made you come away up here to-night? And you, too, Mrs. Fairfield. It's to bad! I could have got along somehow without the milk."

"Billie promised you," Mrs. Fairfield answered. And Billie wished nobody would look at him.

"Twasn't any matter, she said, mother," he urged, when they had started for home again.

The wind was in their backs now, and Billie's ears were warm.

"Buy the truth, and sell it not," said his mother. "The matter was your promise, Billie. Would you sell the truth just to get rid of walking up to Mrs. Selden's!"

Billie made no answer. He was ashamed again.

Presently he asked his mother if she would slide down hill. Mrs. Fairfield laughed; but she was a small woman, and she tucked herself up on the front of the sled, while Billie stuck on behind, and they slid down the long hill to their own yard, where Billie skilfully steered in. His mother praised the way he managed his sled, but Billie was still uncomfortable.

"Why don't you do something to me, mother?" he said, while they were warming themselves at the big coal stove in the sitting-room. "I believe I'd feel better to have a good whipping."

His mother smiled at him.

"'Twould be pretty hard work for me to whip such a big boy as you are. Don't you want to help instead of making me do more? I'll tell you how you will be punished, Billie," she continued. "It's too late to finish mending these stockings to-night, so I shall mend them to-morrow when I was going to make a cottage pudding, and there'll be no pudding for dinner."

Cottage pudding was Billie's favorite dessert, and this was a blow that he laid to heart.

He and his father would say "cottage pudding" to each other for a long time afterward, if anything was in danger of being neglected or forgotten. And when Billie had grown to be a man, and

people said, "Just give me Billie Fairfield's word: that's all I want," Billie would smile, and say, "Yes, my mother taught me to keep a promise."—A. M. L. Hawes.

DOMESTIC ECONOMY.

Hints to Housekeepers.

To polish a tortoise shell comb apply a few drops of olive oil and rub long and thoroughly with a soft woolen cloth.

A strong solution of alum in hot water applied to furniture and crevices in the wall with a paint brush is sure destruction to insects of all sorts.

Following the English fashion, crisp, tender celery stalks are often handed round with cream cheese and crackers at dinner just before the coffee is served.

Steel knives that are not in general use may be kept from rusting if they are dipped in a strong solution of soda (one part of water to four parts of soda). Then wipe dry, roll in a flannel and keep in a dry place.

The favorite way of making up handkerchief squares is in the form of a bolero. Special attention is given to the revers, in order that the fringe, which is a feature with most of the squares, may be seen to advantage.

Benares brass lamps represent the latest idea in the lamp line. These have a lantern-like top, with high carved pedestal, giving the effect of much pedestal and little lamp, but are artistic and show beautiful designs in carving.

"What is the use of sending you good tea?" asked Wu Ting Fang, Chinese ambassador to the United States, at a recent dinner. "In this country you have what you call tea parties. There is little tea at them. Your board of experts should see that tea is served at all tea parties. Why, you don't know how to make tea over here. You put lemon in it; you put sugar and cream in it and spoil the taste of it. You don't take it clean and neat, and then you complain that the tea isn't of the right quality. If you took your tea as we do in China, you would get higher quality in it."

An experienced dentist says that the carelessness of parents frequently sacrifices the personal charm of their children to an extent wholly unnecessary. The first teeth should be preserved until actually pushed out by the second, as the jaw contracts when they are removed any considerable length of time before the second. The first set should be brushed with the softest possible brush and a good paste, and when signs of decay appear the child should be taken to a competent dentist for advice and treatment. In this way the child is almost assured of sound, evenly growing teeth when womanhood or manhood is reached.

The young woman who looks mournfully in the mirror upon the reflection of bony neck and thin arms may do much to remedy the trouble with little expense or effort. Olive oil is one of the most nutritious of food products, and a persistent and liberal use of salads aids materially in the acquisition of flesh. A salad of oranges and bananas, cut in small pieces and drenched freely in French dressing, may be taken before going to bed without injury to the digestive organs. Vegetable salads should be included in the luncheon and dinner menu every day. Fish salads made of the more delicate, white-fleshed fish are excellent, and sardines form a valuable addition to the "beauty" of fare.

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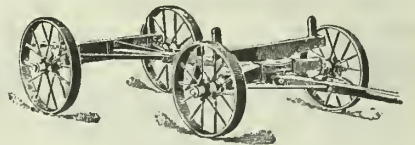
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, April 25, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	65 1/2 @ 66 1/2	66 1/2 @ 67 1/2
Thursday.....	65 1/2 @ 66 1/2	67 @ 68 1/2
Friday.....	65 @ 65 1/2	66 1/2 @ 67 1/2
Saturday.....	65 1/2 @ 66 1/2	66 1/2 @ 67 1/2
Monday.....	65 1/2 @ 66 1/2	66 1/2 @ 67 1/2
Tuesday.....	64 1/2 @ 65 1/2	66 1/2 @ 67 1/2

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday.....	5s 10 d	5s 9 1/2 d
Thursday.....	5s 9 1/2 d	5s 8 1/2 d
Friday.....	5s 9 d	5s 8 1/2 d
Saturday.....	5s 9 d	5s 8 1/2 d
Monday.....	5s 8 1/2 d	5s 8 1/2 d
Tuesday.....	5s 9 d	5s 8 1/2 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	95 @ 95 1/2	1 03 1/4 @ 1 03 1/2
Friday.....	94 1/4 @ 94 1/2	1 02 1/4 @ 1 02 1/2
Saturday.....	94 1/4 @ 93 1/2	1 02 1/4 @ 1 02 1/2
Monday.....	93 1/4 @ 92 1/2	1 01 1/4 @ 1 02 1/4
Tuesday.....	93 @ 93 1/2	1 02 1/4 @ 1 03 1/4
Wednesday.....	94 1/2 @ —	1 04 1/4 @ 1 03 1/2

WHEAT.

There has been little change in the general condition of the spot or sample market for wheat since last review. The reports of previous week as to shortage in Chile, poor crops in a considerable portion of Russia, and damaging weather in other grain growing sections, all failed to improve values, either here or abroad. It is quite probable that the statements were exaggerated in the interest of speculative operators who either desired to unload option holdings or to further short the market, and resorted to this scheme to make as much profit as possible in the option dealings. A better foreign demand, an increased supply of shipping, and easier freight rates, are necessary to improve to any material degree the local market for wheat. While none of the above requirements for a better state of affairs are in evidence to any noteworthy extent at present, there is some prospect that at least ships and freight will be a little more favorable to wheat than they have been lately before many months of the new season elapse. There was an increase this week of 978,000 bushels in the world's wheat shipments.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 92 1/2 @ 95 1/2.
December, 1900, delivery, \$1.01 1/4 @ 1.04 1/2.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at 94 1/2 @ —; December, 1900, \$1.04 1/2 @ 1.03 1/2.

California Milling.....	95 @ 1 02 1/2
Cal. No. 1 shipping, alongside.....	93 1/2 @ 95
Oregon Valley.....	95 @ 1 00
Walla Walla Blue Stem.....	95 @ 1 00
Walla Walla Club.....	85 @ 1 00
Off qualities wheat.....	82 1/2 @ 92 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	6s 3d @ 6s 5d	6s 4d @ 6s 4 1/2 d
Freight rates.....	2 1/2 @ —	40 @ —
Local market.....	\$1 06 1/4 @ 1 08 1/4	93 1/2 @ 97 1/2 c

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

A very quiet market is being experienced in this commodity, with a lack of firmness, although quotable rates remain in same position as for some time past. It is not possible, however, to effect heavy transfers of extras at full current figures. Superfines are meeting with a moderately firm market, stocks of cheap and low grade flour being rather light. Despite the light stocks of superfines, there is no quotable advance, nor none in prospect.

Superfine, lower grades.....	32 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

Aside from fair average shipments to the Hawaiian Islands, mostly feed descriptions, there is scarcely any outward movement of this cereal at present. Business on local account is of light volume, and at much the same easy rates as have been

current for the past fortnight or more. Values are now at a low plane, and that they will recede materially from present levels, unless for very inferior stock, is not anticipated. Option market was quiet, with fluctuations slight.

Feed, No. 1 to choice.....	72 1/2 @ 75
Feed, fair to good.....	65 @ 70
Brewing, No. 1 to choice.....	85 @ 95
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

While the market is no worse than a week ago, it is quite inactive for most descriptions, and absence of strength is a prominent feature for nearly all whites and grays, either milling or feed oats. The only noteworthy inquiry is for low-priced colored oats, these affording consumers the best values, but buyers in quest of these want to purchase at about as low figures as have been current any time during the past month. Asking rates for the choicest colored oats, however, have been advanced.

White Oats, fancy feed.....	1 22 1/4 @ 1 25
White, good to choice.....	1 12 1/4 @ 1 20
White, poor to fair.....	1 05 @ 1 10
Gray, common to choice.....	1 07 1/4 @ 1 15
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	92 1/4 @ 1 02 1/2
Red.....	95 @ 1 17 1/2

CORN.

There is no scarcity of Large White, and same is offering at comparatively low rates, with demand not very extensive. Large Yellow which is well seasoned and in every way desirable continues in light supply; market is firm at the quotations. That there will be any particular weakness developed on this variety the current season does not seem probable. Small Yellow is held at fully as stiff figures as last quoted.

Large White, good to choice.....	1 05 @ 1 07 1/2
Large Yellow.....	1 17 1/2 @ 1 20
Small Yellow.....	1 50 @ 1 60
Eastern, in bulk (carload lots).....	1 10 @ 1 12 1/2

RYE.

Arrivals the current week were considerably above the average, but most of this rye had been previously placed. The market presents a better tone, although quotable values are not radically changed.

Good to choice, new.....	97 1/2 @ 1 02 1/2
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BUCKWHEAT.

Virtually nothing doing and not much stock upon which to operate. Prices remain nominally as before.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

Not many now coming forward, nor is the outward movement extensive. Pinks have been receiving a little more attention the past week than for some time previous, and tendency on them has been to more firmness, but with this exception, the market shows virtually the same condition as noted in last report. Supplies are not heavy of any description, are in few and strong hands, and are held with confidence.

Pea, fair to good, 100 lbs.....	3 35 @ 3 50
Small White, good to choice.....	3 35 @ 3 50
Lady Washington.....	3 15 @ 3 25
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 70 @ 2 90
Bayos, good to choice.....	3 15 @ 3 35
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 25 @ 5 35
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

DRIED PEAS.

About the only business doing is an occasional small transfer from second hands. Current quotations are based mainly on jobbing prices.

Green Peas, California.....	2 20 @ 2 35
Niles Peas.....	2 00 @ 2 25

WOOL.

While the market is not exactly stagnant, very little life has been so far displayed. Purchasing has been confined almost wholly to one or two operators. The market continues to show healthy tone, however, and there is reason to expect some activity in the near future. There are advices from the East to the effect that most of the large handlers on the Atlantic side have dispatched buyers to the prominent wool-producing sections of the West, with instructions to operate. Former quotations are continued, being based principally on asking figures.

SPRING.

Humboldt and Mendocino.....	20 @ 23
Northern, free.....	16 @ 18
Northern, defective.....	13 @ 16
Middle Counties, free.....	15 @ 17
Middle Counties, defective.....	13 @ 15
Southern Mountain, 12 mos.....	12 @ 14
Southern Mountain, free, 7 mos.....	12 @ 15
Southern Mountain, defective, 7 mos.....	10 @ 12
Nevada, as to condition.....	16 @ 18

HOPS.

The market in this center is exceedingly quiet, with values largely nominal, owing to the prevailing inactivity, and this condition of affairs gives promise of continuing through the balance of the season. There are not many hops offering in this market, and none in a wholesale way which can be termed choice. Low grades are not being sought after. Fancy would command an advance on extreme quotation.

Good to choice, 1899 crop.....	6 @ 9
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HAY AND STRAW.

In the matter of quotable rates the hay market remains practically unchanged, but there has been a slightly better tone manifested, more particularly for good medium grades, which have been lately selling a little more readily and at slightly better average figures than for some time past. Receipts have been rather light, and to this fact is wholly attributable the little improvement which exists. Sales of select Wheat hay are still being made occasionally up to \$10, mostly in a small way.

Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 00 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 0 @ 7 00
Stock.....	4 50 @ 5 50
Compressed.....	6 50 @ 9 50
Straw, 3 bale.....	30 @ 40

MILLSTUFFS.

Markot for Bran showed a little more firmness, under decreased offerings. The demand at the advanced figures asked, however, was not brisk. Middlings and Shorts were in rather light stock, but there was no material change in quotable values. Rolled Barley ruled fairly steady. Milled Corn was no more favorable to buyers than last noted.

Bran, 3 ton.....	11 50 @ 12 50
Middlings.....	15 0 @ 18 00
Wheat, Oregon.....	13 00 @ 15 00
Shorts, Rolled.....	16 00 @ 16 50
Cornmeal.....	24 50 @ 25 00
Cracked Corn.....	25 00 @ 26 00

SEEDS.

There is so little doing in this line, and most descriptions are in such insignificant supply that values are of necessity poorly defined. Former quotations are continued, in the absence of anything warranting making any changes in them.

Mustard, Trieste.....	3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25
Canary.....	3 1/4 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	9 @ 10

BAGS AND BAGGING.

The same featureless condition prevails in the Grain Bag market as last reported. Importers and wholesale dealers are evidently not going much out of their way to hunt up business at present, believing that by keeping quiet they will fare fully as well if not better later on. Demand for Wool Sacks is about over for the season. In quotable values there are no changes to record.

Calcutta Grain Bags, buyer June-July.....	6 1/4 @ —
Calcutta Grain Bags, spot.....	6 1/4 @ —
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ —
State Prison Bags, 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/2
Fruit Sacks, cotton.....	6 1/4 @ 7 1/4

HIDES, PELTS AND TALLOW.

Markot for Hides, both wet salted and dry, is moderately firm at the rates quoted. Pelts are not in very active request, but values are without quotable change. Tallow values are ruling steady, with demand fair.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10	9
Medium Steers, 48 to 56 lbs.....	9 1/2	8 1/2
Light Steers, under 48 lbs.....	9 1/4	8 1/4
Heavy Cow Hides, over 50 lbs.....	9 1/2	8 1/2
Light Cow Hides, under 50 lbs.....	9 1/4	8 1/4
Wet Salted Kip.....	9	8
Wet Salted Veal.....	9	8
Wet Salted Calf.....	10	9
Dry Hides.....	18	15
Dry Kip and Veal, 11 to 16 lbs.....	17	13
Dry Calf, under 4 lbs.....	20	16
Salted Horse Hides, large.....	2 50 @ —	—
Salted Horse Hides, medium.....	2 00 @ —	—
Salted Horse Hides, small.....	1 00 @ —	—
Dry Horse Hides, large.....	2 00 @ —	—
Dry Horse Hides, small.....	75 @ 1 00	—
Dry Colts' Hides.....	50 @ 75	—
Pelts, long wool, 3 skin.....	1 00 @ 1 25	—
Pelts, medium, 3 skin.....	70 @ 80	—
Pelts, short wool, 3 skin.....	35 @ 60	—
Pelts, shearing, 3 skin.....	20 @ 35	—

Deer Skins, best summer.....	27 1/2 @ 30
Deer Skins, good medium.....	20 @ 22 1/2
Deer Skins, thin winter.....	— @ 10
Elk Hides.....	10 @ 12
Tallow, good quality.....	5 @ 5 1/2
Tallow, No. 2.....	4 1/4 @ 4 1/2
Goat Skins, perfect.....	30 @ 37 1/2
Goat Skins, damaged.....	10 @ 20
Kid Skins.....	5 @ 10

HONEY.

Small quantities of new crop have been received, but not enough has been yet done in the same to clearly define values. Current quotations would not likely be sustained under anything like free offerings. The yield will undoubtedly prove light, and the market shows a generally firm tone.

Extracted, White Liquid.....	7 1/2 @ 8
Extracted, Light Amber.....	7 @ 7 1/2
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	11 1/4 @ 12 1/4
Amber Comb.....	8 @ 10

BEEFWAX.

Only small quantities offering. Market is fully as favorable to the selling interest as previously noted.

Good to choice, light, 3 lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Market for Beef is showing weakness, with slow demand at prevailing rates. Mutton is in very good supply, as compared with requirements, and market is slightly lower. Veal was in light receipt and market firm. Lamb tended in favor of buyers. Hogs commanded about as stiff figures as preceding week, arrivals being light.

Beef, first quality, dressed, net 3 lb.....	6 @ 6 1/2
Beef, second quality.....	6 @ —
Beef, third quality.....	5 1/2 @ —
Mutton—ewes, 6 @ 7 c; wethers.....	6 @ 7 1/2
Hogs, hard grain fed, medium.....	5 1/2 @ 6 1/2
Hogs, small, fat.....	5 1/2 @ 6 1/2
Hogs, large, hard.....	5 1/2 @ 6 1/2
Hogs, aorn-fed.....	— @ —
Hogs, feeders.....	5 @ 5 1/2
Hogs, country dressed.....	6 @ 6 1/2
Veal, small, 3 lb.....	7 @ 9
Veal, large, 3 lb.....	7 @ 8
Lamb, spring, 3 lb.....	8 1/4 @ 9

POULTRY.

Arrivals were not especially heavy of either domestic or Eastern, and there was a moderately firm market for all desirable stock. Small and poor Hens did not move readily at lowest figures quoted, while large and fat ones brought above quotations. Some Broilers were sent in entirely too small to be sought after, most buyers refusing to handle them at any figure.

Turkeys, dressed, 3 lb.....	— @ —
Turkeys, live hens, 3 lb.....	13 @ 14
Turkeys, live gobblers, 3 lb.....	11 @ 12
Hens, California, 3 dozen.....	4 50 @ 5 50
Roosters, old.....	4 25 @ 4 50
Roosters, young (full-grown).....	6 50 @ 7 00
Fryers.....	5 50 @ 6 00
Broilers, large.....	4 00 @ 5 00
Broilers, small.....	2 50 @ 3 50
Ducks, old, 3 dozen.....	4 50 @ 5 00
Ducks, young, 3 dozen.....	6 00 @ 7 00
Geese, 3 pair.....	1 75 @ 2 00
Goslings, 3 pair.....	2 25 @ 2 50
Pigeons, old, 3 dozen.....	1 75 @ 2 00
Pigeons, young.....	1 75 @ 2 00

BUTTER.

Market shows steadiness, the packing season being now fully on, both here and in the country. That values for desirable qualities will go lower this season is altogether improbable. Most of the butter now coming forward is showing excellent condition.

Creamery, extras, 3 lb.....	17 1/2 @ —
Creamery, firsts.....	17 @ —
Creamery, seconds.....	16 @ —
Dairy, select.....	16 @ 16 1/2
Dairy, seconds.....	15 @ 15 1/2
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ —
Creamery in tubs.....	18 @ —
Pickled Roll.....	— @ —
Pirkin, California, choice to select.....	18 @ 19
Pirkin, common to fair.....	16 @ 17

CHEESE.

Market is showing considerable activity at the comparatively easy figures current for new product. Although there are liberal arrivals, stocks are given little opportunity to accumulate. There is some prospect of a firmer market being soon experienced.

California, fancy flat, new.....	8 @ —
California, good to choice.....	7 1/2 @ —
California, fair to good.....	7 @ —
California Cheddar.....	— @ —
California, "Young Americas".....	7 1/2 @ 9

EGGS.

As intimated in last issue would likely be the case, this market has shown an improved tone the current week. While there is no great advance in quotable rates, better average prices are being realized, and prospects are favorable for the market for best qualities developing further improvement at an early day. Arrivals of domestic product are on the decrease. Eastern markets show firmness.

California, select, large, white and fresh.....	16 1/2 @ —
California, select, irregular color & size.....	15 @ 16
California, good to choice store.....	14 @ 14 1/2
Eastern, as to section and grading.....	14 @ 16
Eastern, cold storage.....	— @ —

VEGETABLES.

Old Onions are so nearly out of stock that they are no longer quotable in a regular way. New Red Onions made a very fair showing this week and will likely be going at quite reasonable figures in the near future. Asparagus was in increased receipt and inclined to weakness. Peas were plentiful and cheap. Other vegetables in season were not in excessive supply, commanding close to the figures last quoted.

Asparagus, $\frac{1}{2}$ box.....	75	@ 2 00
Beans, String, $\frac{1}{2}$ lb.....	6	@ 10
Cabbage, choice garden, $\frac{1}{2}$ 100.....	40	@ —
Cauliflower, $\frac{1}{2}$ dozen.....	50	@ —
Cucumbers, hothouse, $\frac{1}{2}$ doz.....	50	@ 1 00
Egg Plant, $\frac{1}{2}$ lb.....	6	@ 8
Garlic, $\frac{1}{2}$ lb.....	3	@ 4
Onions, Red, Cal., good to choice.....	2 00	@ 3 00
Onions, Oregon, $\frac{1}{2}$ cental.....	—	@ —
Peas, Sweet, garden, $\frac{1}{2}$ lb.....	2 1/2	@ 3
Peas, Green, $\frac{1}{2}$ sack.....	75	@ 1 25
Peppers, Green Chile, $\frac{1}{2}$ lb.....	10	@ 15
Peppers, Bell, $\frac{1}{2}$ lb.....	—	@ —
Rhubarb, $\frac{1}{2}$ box.....	40	@ 1 00
Squash, Summer, $\frac{1}{2}$ box.....	1 00	@ 1 50
Tomatoes, Southern, $\frac{1}{2}$ box.....	1 00	@ 1 25
Tomatoes, Bay, $\frac{1}{2}$ box.....	—	@ —

POTATOES.

With materially decreased arrivals of old potatoes, the market improved considerably the past week. Burbank Seedlings from Oregon sold mainly within range of 85c@\$.1.10, showing an advance of about 20c per cental over the figures which had been current. The demand, however, was limited to immediate needs, and only choice were especially sought after. New potatoes were in quite fair supply for this early date, and the tendency on these was to easier prices.

Burbanks, River, $\frac{1}{2}$ cental.....	50	@ 80
Burbanks, Bay counties, $\frac{1}{2}$ cental.....	50	@ 85
Burbanks, Humboldt.....	—	@ —
Burbanks, Oregon.....	75	@ 1 00
River Reds.....	75	@ 85
Early Rose.....	—	@ —
Garnet Chile.....	—	@ —
New Potatoes, $\frac{1}{2}$ cental.....	1 00	@ 1 50
Sweet, River, $\frac{1}{2}$ cental.....	—	@ —
Sweet, Merced.....	—	@ —

The Fruit Market.

FRESH FRUITS.

While Cherries were in larger supply than previous week, offerings of choice to select qualities were by no means heavy, and such continued to bring as a rule comparatively stiff prices. Strawberries inclined in favor of the consuming interest most of the week, with receipts of fairly liberal volume. Blackberries and Raspberries arrived in too small quantity and too irregularly to warrant giving quotations. Apples continue to be offered out of cold storage, but with other and more seasonable fruit on market, they are receiving just now very little attention.

Apples, fancy, 4-tier box.....	1 75	@ 2 25
Apples, good to choice, $\frac{1}{2}$ 50-lb box.....	1 50	@ 1 75
Apples, common to fair, $\frac{1}{2}$ 50-lb box.....	75	@ 1 25
Cherries, Black Tartarian, $\frac{1}{2}$ box.....	1 25	@ 1 50
Cherries, White and Red, $\frac{1}{2}$ box.....	75	@ 1 25
Strawberries, Longworth, $\frac{1}{2}$ chest.....	7 00	@ 9 00
Strawberries, Large, $\frac{1}{2}$ chest.....	3 00	@ 5 00

DRIED FRUITS.

The market for cured and evaporated fruits has shown no improvement in any respect since last review. Trade has been slow and the situation in the main unfavorable to sellers. Prunes are still moving in a moderate way, but at practically the same low figures as for some time past. There is, however, a firmer tone to the market for the large sizes, and a possibility of there soon being slightly better prices. Eastern handlers have waked up to the fact that the large Prunes at the rates lately current are relatively the cheapest on the market, with only about a cent difference in price between large and small, while ordinarily 70-80's are 2c. under the price of 40-50's. There has been fairly active inquiry for 40's at 4c. f. o. b., but for the other sizes there has been no demand on Eastern account worth mentioning. Europe is not now purchasing very freely. Peaches and Apples continue to drag, and market is weak at the quotations. Some speculative holdings of Peaches are being urged to sale at 5@5 1/2c. for good to choice, owners seeing no inducement to carry any longer. Figs are receiving scarcely attention, although still in fairly liberal supply. If buyers could be found with inclination to take hold in anything like wholesale fashion, special efforts would be made to accommodate them, and holders would readily grant concessions rather than miss an opportunity of unloading. While there has been some talk about contracting for new crop dried fruit, particularly Apricots, there is no evidence of much business in this line having yet been effected. Sales could be made of new Apricots for forward delivery at 7@7 1/2c. on ranch, but growers as a rule do not regard any such offers as worthy of serious consideration at present. The yield of Apricots promises to be not much larger than last year, some localities reporting a decided shortage, as

compared with last season, while in other sections the yield will be heavier. The Peach crop is likely to prove a good average. Of most deciduous fruits, the yield in this State and on the entire coast is apt to make a very fair showing, compared with previous years.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, $\frac{1}{2}$ lb.....	10 1/2	@ 12
Apricots, Royal, fancy.....	12 1/2	@ 13
Apricots, Moorpark.....	13	@ 15
Apples, in 50-lb boxes, rings, pressed, fancy.....	6 1/2	@ —
Apples, 50-lb boxes, rings, pressed, good to choice.....	5	@ 6
Figs, White, fancy pressed.....	5 1/2	@ 3 1/2
Peaches, unpeeled, good to choice.....	5	@ 6
Peaches, unpeeled, fancy.....	7	@ —
Peaches, peeled, in boxes.....	12 1/2	@ 15
Pears, unpeeled Bartletts, halved, fancy.....	9	@ 9 1/2
Pears, halved, unpeeled Bartletts.....	6 1/2	@ 7 1/2
Pears, quartered, unpeeled Bartletts.....	6 1/2	@ 7 1/2
Plums, Black, pitted.....	6 1/2	@ 7 1/2
Plums, White and Red.....	7	@ 8
Prunes, in sacks 40-50s.....	3 1/2	@ 4
40-50s.....	4	@ —
50-60s.....	3 1/2	@ 3 1/2
60-70s.....	3 1/2	@ 3 1/2
70-80s.....	3	@ 3 1/2
Prunes in boxes, 1/2c higher for 25-lb boxes, 1/2c higher for 50-lb boxes.....	—	@ —
4 sizes Santa Claras and equal.....	—	@ —
4 sizes San Joaquin and Northern.....	—	@ —
Prunes, Silver.....	4	@ 6

COMMON SUN-DRIED.

Apples, sliced.....	3 1/2	@ 4 1/2
Apples, quartered.....	3 1/2	@ 4 1/2
Figs, Black.....	—	@ 3
Figs, White.....	3	@ 3 1/2
Peaches, unpeeled.....	5	@ 6

RAISINS.

Very little doing in Raisins of any kind, either in offerings from first or second hands. Although quotations are unchanged, they are largely nominal at present. While stocks are not heavy, and the assortment is not great, there are more Raisins remaining unplaced than is desirable for this late date. That there will be much demand during the balance of the current season is not probable.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, $\frac{1}{2}$ box.....	1 60	@ —
do do 2-crown, $\frac{1}{2}$ box.....	1 50	@ —
Valencia Layers, $\frac{1}{2}$ 20-lb box.....	80	@ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6 1/2	@ —
Loose Muscatel, seedless.....	5	@ —
Pacifics.—2-crown loose Muscatel, 5 1/2c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c.	—	@ —
Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.	—	@ —
(Above prices for loose raisins are for 50-lb. boxes.)	—	@ —
Thompson Seedless.—Bleached fancy, $\frac{1}{2}$ lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.	—	@ —
Sultanas.—Bleached fancy, $\frac{1}{2}$ lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.	—	@ —
Loose Valentias.—Fancy, $\frac{1}{2}$ lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.	—	@ —
Valencia Clusters.—Fancy, $\frac{1}{2}$ lb., 7c; choice, 6c; standard, 5c.	—	@ —

CITRUS FRUITS.

The Orange market has shown weakness, except for strictly select Navels, which were not plentiful and in a small way were salable above quotable rates. Common qualities of both Navels and Seedlings were offered freely and at reduced prices, with demand on the decline. Lemon market was quotably unchanged, but lacked firmness, figures below noted being based mainly on the views of holders. Under selling pressure these prices would not have been obtainable. The Lime market was quiet and inclined in favor of buyers, supplies being fairly liberal as compared with requirements.

Oranges—Navels, fancy $\frac{1}{2}$ box.....	2 50	@ 3 00
Navels, good to choice.....	2 00	@ 2 50
Navels, common to fair.....	1 00	@ 2 00
St. Michaels.....	1 50	@ 2 25
Mediterranean Sweet.....	1 50	@ 2 00
California Seedlings.....	75	@ 1 75
Lemons—California, select, $\frac{1}{2}$ box.....	2 25	@ 2 50
California, good to choice.....	1 50	@ 2 00
California, common to fair.....	1 00	@ 1 25
Limes—Mexican, $\frac{1}{2}$ box.....	4 00	@ 4 50
California, small box.....	50	@ 1 00

NUTS.

The market is in all essential respects the same as last noted. Almonds are in light exhibit and in consequence of the recent reduction in spot supplies are being more firmly held. Walnuts of desirable quality are so nearly out of stock that they are hardly quotable. The Peanut market continues to be lightly supplied and remains firm at the previously quoted range of prices.

California Almonds, shelled.....	14	@ 17
California Almonds, paper shell, $\frac{1}{2}$ lb.....	10	@ 12
California Almonds, soft shell.....	8	@ 9
California Almonds, hard shell.....	4	@ 5
Walnuts, White, soft shell.....	9	@ 10
Walnuts, White, California, standard.....	7	@ 8
Chestnuts, California Italian.....	8	@ 10
Peanuts, California, fair to prime.....	5	@ 6
Peanuts, Eastern, hand-picked.....	6	@ 6 1/2
Pine Nuts.....	5	@ 6

WINE.

There is no appreciable change to note in the condition of the wine market. There is little or no competitive bidding among dealers. For dry wines of last year's vintage seeking buyers the market

is not quotable over 14@16c per gallon, San Francisco delivery, although in occasional instances for very select a little more might be realized. When buyers go in search of dry wines of 1899 they find little offering under 16c, and for some holdings of superior quality not less than 20c will be accepted. Further demand is reported by frost, which may improve the market later on. Shipments of wine from this port by sea in March, 1900, were 495,000 gallons and 965 cases, valued at \$186,100. For March, 1899, shipments were 400,175 gallons and 815 cases, valuation \$149,000, showing an increase for March, 1900, as compared with corresponding month a year ago, of 95,025 gallons, 150 cases, and increase in value of \$37,100.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{4}$ sacks.....	143,125	5,238,784
Wheat, centals.....	88,155	5,648,762
Barley, centals.....	29,431	4,636,625
Oats, centals.....	8,106	687,809
Corn, centals.....	3,321	119,136
Rye, centals.....	465	92,762
Beans, sacks.....	3,178	346,353
Potatoes, sacks.....	12,201	1,075,208
Onions, sacks.....	307	140,411
Hay, tons.....	1,818	133,504
Wool, bales.....	1,618	45,493
Hops, bales.....	107	9,702

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{4}$ sacks.....	111,440	3,565,142
Wheat, centals.....	120,371	5,017,660
Barley, centals.....	2,752	3,659,373
Oats, centals.....	2,214	41,515
Corn, centals.....	214	17,203
Beans, sacks.....	51	23,645
Hay, bales.....	5,964	117,512
Wool, pounds.....	—	4,324,433
Hops, pounds.....	14,687	999,734
Honey, cases.....	2	3,438
Potatoes, packages.....	92	67,425

California Dried Fruit at New York.

NEW YORK, April 25.—Evaporated apples, common, 4 1/2@5c; prime wire tray, 5 1/2@6c; choice, 7@7 1/2c; fancy, 7 1/2@8c. California dried fruits inactive but fairly steady at unchanged values. Prunes, 3 1/2@7c. Apricots, Royal, 13@15c; Moorpark, 15@18c. Peaches, unpeeled, 7 1/2@9c; peeled, 18@22c.

MOORE, FERGUSON & CO.

WOOL, GRAIN, FLOUR

General Commission Merchants,

310 CALIFORNIA ST., S. F.

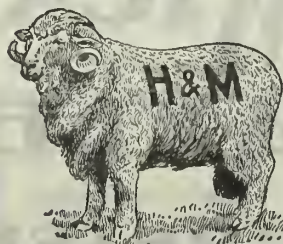
Members of the San Francisco Produce Exchange.

Personal attention given to sales and liberal advances made on consignments at low rates of interest

HEATH & MILLIGAN
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Established 1851.
MAKERS OF

SHEEP MARKING
INK

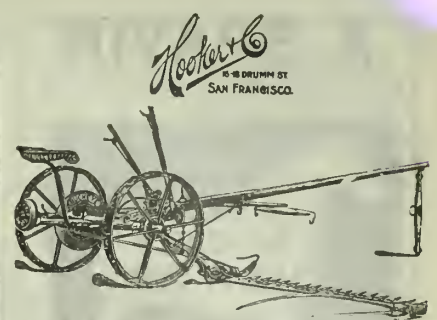


Only ink that is permanent
and does not lessen the
price of the wool.
If your dealer cannot supply you
address the manufacturers.



Rife Hydraulic Engine

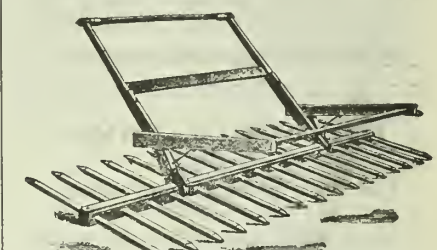
PUMPS WATER AUTOMATICALLY BY WATER POWER. Place this engine two feet or more below your water supply and it will deliver a constant stream of water 30 feet high for every foot of fall.
WITHOUT STOPPING.
WITHOUT ATTENTION.
RIFE ENGINE CO., 123 Liberty Street, New York.



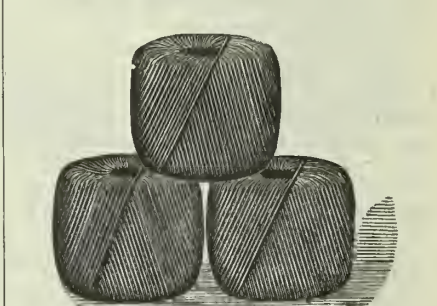
AKRON BUCKEYE MOWER.



PACIFIC CHAMPION SELF DUMP RAKE.



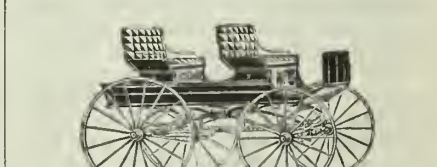
CHAMPION REVOLVING RAKE.



MANILA BINDING TWINE.



RUSHFORD FARM WAGONS.



MODEL 4 SPRING WAGON.



NO. 53. WORLD BEATER SURREY.



NO. 1. WORLD BEATER BUGGY.

HOOKER & CO.,

16 & 18 DRUMM ST.,
SAN FRANCISCO.

A SPAVIN

Ringbone, Splint or Curb will reduce the selling price of any horse 50 percent. You might just as well get full value for your horse. Cure him with



KENDALL'S SPAVIN CURE

Bony and unnatural enlargements, also all forms of lameness yield readily to this remedy. It is certain and sure in its effects and cures without a blemish as it does not blister.

Opdyke, Ill., Dec. 17, 1897.
Dear Sir:—Enclosed find stamp for your Treatise on the Horse. I can truly recommend your Kendall's Spavin Cure for I have used it for several years on Spavins, Splints and Lameness. It has always given good satisfaction. I am never without a bottle on hand. Use my name if desired.

It works thousands of cures annually. Endorsements like the above are a guarantee of merit. Price, \$1; six for \$5. As a liniment for family use it has no equal. Ask your druggist for KENDALL'S SPAVIN CURE, also "A Treatise on the Horse," the book free, or address
DR. B. J. KENDALL CO. ENOSBURG FALLS, VT.

THE STOCK YARD.

Live Stock in the Coming Census.

A distinctive feature of the coming census of live stock is that provided for on a special schedule by which all domestic animals not on farms and ranges will be enumerated.

The preliminary investigation necessary to formulate an adequate plan for taking the live stock of the country disclosed that no census for domestic animals could be satisfactory that did not include the many thousands to be found everywhere off the farms. It likewise disclosed that there was no provision in the census law for compensating enumerators for carrying and filling in live stock schedules in cities and villages.

However, the main schedule was prepared and printed with some new features of classification which will show the number on farms in the United States on June 1, 1900, thus: Calves, lambs, colts, and mule colts under one year old; steers, one, two, three and over; heifers, one and under two; "cows kept for milk," two and over; "cows and heifers not kept for milk," two and over; bulls, one and over; horses and mules, one, two and over; ewes, one and over; rams and wethers, one and other; swine, goats, asses and burros, all ages.

This age classification was designed to afford a basis from which to calculate approximately the number of live stock by age for a given year in the future, as well as the probable increase or productivity of cattle and sheep for any future season, prior to the Thirtieth Census, which census will furnish a new foundation for such calculations.

But such a basis would be very imperfect if it failed to include the cattle, sheep, goats, swine, horses and mules on trains and otherwise in transit on June 1, 1900; the number in stock yards at terminal and initial points and the number in distillery, brewery and other feeding yards and pens; in livery and boarding stables, private and other barns and enclosures in all villages and cities; in lumber, contractors' and mining camps; in street railway, express, delivery, omnibus, sawmill and factory stables, etc., etc.

As the number of animals thus described was estimated at several millions, and their valuation was believed to be higher, animal for animal, than that for similar stock on the farm, Director Merriam felt warranted in asking Congress for authority to provide specially for their enumeration. His request was granted and a special schedule was prepared on which will be gathered all live stock not on farms and ranges, the classification to be the same as on the main schedules.

It is interesting to note that these rather elaborate census preparations come at a time when there is a very sharp increase in the value of all save sheep and milch cows. From the sta-

tistics of the Department of Agriculture is made the following table showing the number of live stock on farms, the date for each year being January 1st:

NUMBER OF LIVE STOCK ON FARMS AND RANGES.

	1898.	1899.	1900.
Sheep	37,656,960	39,114,453	41,883,065
Milch cows	15,840,886	15,990,115	16,292,360
Other cattle	29,264,197	27,994,225	27,610,054
Mules	2,257,665	2,134,213	2,086,027
Horses	13,960,911	13,665,307	13,537,524

Total 98,980,619 98,898,313 101,409,030

Increase Decrease
in 2 years. in 2 years.

Sheep	4,226,105	
Milch cows	451,474	
Other cattle		1,654,143
Mules		171,638
Horses		423,387

Total 4,677,579 2,249,168

The increase in the aggregate value and the average value per head for the period mentioned has been marked, as information drawn from the same authority and arranged as follows, shows:

Kind—	1898.	Total value.	Per head.
Sheep		\$ 96,721,133	\$ 2 46
Milch cows		434,813,826	27 45
Other cattle		612,296,634	20 92
Mules		99,032,962	43 88
Horses		478,362,407	34 26

Total \$1,721,226,062

Kind—	1899.	Total value.	Per head.
Sheep		\$107,697,530	\$ 2 75
Milch cows		474,233,925	29 66
Other cattle		637,931,135	22 79
Mules		95,963,261	44 96
Horses		511,074,813	37 40

Total \$1,826,900,664

Kind—	1900.	Total value.	Per head.
Sheep		\$122,665,913	\$ 2 93
Milch cows		314,812,106	31 60
Other cattle		689,486,260	24 97
Mules		111,717,092	53 56
Horses		603,969,442	44 61

Total \$2,042,650,815

Kind—	1900.	Total value.	Per head.
Sheep		\$25,944,780	\$ 0 47
Milch cows		79,998,280	4 15
Other cattle		77,189,626	4 05
Mules		12,685,030	9 68
Horses		125,607,035	10 35

Total \$321,424,751

Add to the above the figures for swine, goats, asses and burros on the farms and ranges, and the great importance of an adequate census of live stock becomes apparent.

It means approximately three billions of dollars—an item of wealth too great to be easily comprehended, and which leads Director Merriam to say: "If all owners and possessors of live stock shall make full and accurate returns, the census of that property for 1900 will not only be more perfect than any of its predecessors but such as to astonish the world by its magnitude."

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akes short roads.

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nd light loads.

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ood for everything
that runs on wheels.

Sold Everywhere.

Made by STANDARD OIL CO.

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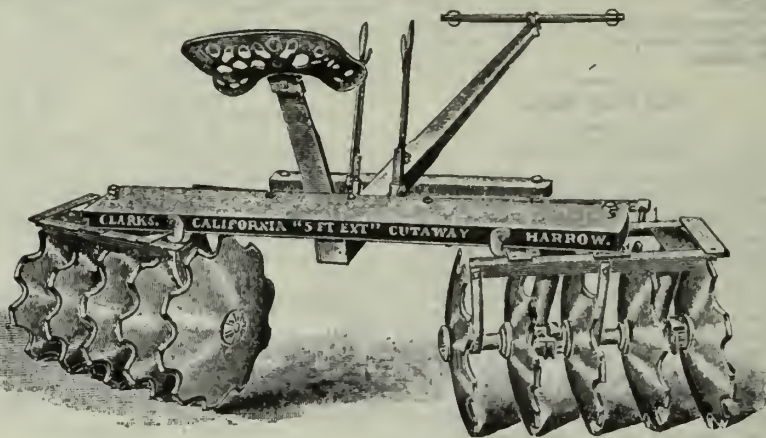


A DE LAVAL "BABY" SEPARATOR would effect an astonishing saving in your dairy work and in the net dollars-and-cents results from it. It would improve quality and save a lb. of butter per cow every week. Can you afford to let the waste go on another season? Why not stop it now? Why not have the agent in your territory bring you a machine and demonstrate the plain facts to you—so plain that you can't longer evade them? We will be glad to do it without any advance promise on your part—knowing that there can be but one result. This will cost you nothing and may profit you much.

Send us your name and address.

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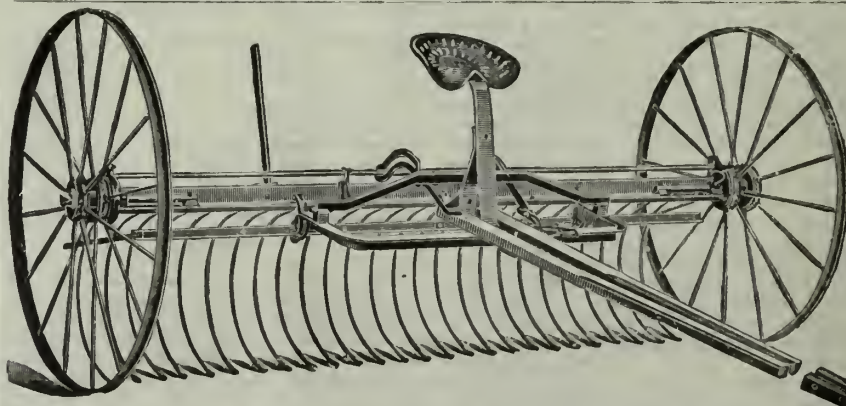
Clark's Reversible Double Lever Extension Head Harrow.

CLARK'S CUTAWAY HARROW.—This Harrow can be used to throw the earth to or from the tree. It can be drawn together and used in the regular length or extended as shown. The 5 and 6 are best all-around two-horse Harrows.

Our LOW Prices Will Surprise You.

5 FT., 6 FT., 8 FT., 10 FT. WRITE OR CALL.

Allison, Neff & Co., 222 Mission Street, SAN FRANCISCO, CAL.



PACIFIC CHAMPION RAKE. SELF DUMP.

Wheels are made with extra wide channel steel tire, with the spokes riveted into the malleable hub and riveted into the tire so there is no possible way for the same to become loose, as is the case where the spokes are screwed into the hub and held with a nut, but they can readily be replaced by a blacksmith.

The frame of the rake is made of forged angle steel, and the teeth are connected to the same by metal tooth sections, and connected to the head by bolts in such a manner that the teeth can be put in or taken out one section at a time.

The spring seat is arranged to adjust in height to suit a small boy or man by simply changing two bolts.

The rake dumps from both wheels by ratchets which are encased at the end of the rake head to prevent the wheels winding with hay.

The dumping device is most simple and durable in its construction. The rake is entirely under the control of the operator when raking on either rough or even ground by the use of our improved foot treadle, and the teeth can be held up by pressing the foot treadle when the rake is dumped, or the teeth can be held down by pressing the foot treadle when the rake is in operation.

HOOKER & CO.,
16 AND 18 DRUMM STREET, SAN FRANCISCO, CAL.

BUG BANE
TREE WASH!
STEAD'S "BUG BANE" is the best and cheapest wash known for either citrus or deciduous trees. Contains no poisonous chemicals. Is a fertilizer and tree tonic combined. Never clogs your pump or closes up the pores of a tree. **EASY TO HANDLE. Always effective.** In use for more than ten years by leading fruit men, some of whom use upwards of 20 tons per year. Their testimonials together with prices and full directions upon application.
Manufactured only by
G. D. STEAD SOAP CO. SAN DIEGO

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR WEEK ENDING APRIL 10, 1900.

- 647,358.—LEACHING TANK—D. W. Balch, S. F.
647,065.—THREAD GUIDE—W. H. Bartolet, Marysville, Wash.
647,364.—GAS LIGHTER—H. R. Bennett, S. F.
647,369.—PAPER HOLDER—R. G. Blower, Los Angeles, Cal.
647,372.—TRUSS—J. W. Bradford, Los Angeles, Cal.
647,218.—INDEX—C. Christiansen, Fairhaven, Wash.
647,385.—SPIKE PULLER—N. Essick, Los Angeles, Cal.
647,399.—SCREEN—Geske & Miller, Seattle, Wash.
647,226.—NAIL EXTRACTOR—G. Guinther, Covina, Cal.
647,449.—MARINE TRAM—E. W. Johnston, Seattle, Wash.
647,097.—R. R. SIGNAL—J. Jorgenson, Seattle, Wash.
647,418.—SLIDING BOLT—H. Kunz, Alameda, Cal.
647,011.—AMALGAMATOR—Malone & Terwilliger, Portland, Or.
647,451.—BEET HARVESTER—Maulhardt & Stino, Simi, Cal.
647,013.—BLACKBOARD RUBBER—J. G. Macredy, S. F.
647,152.—VEHICLE RUB IRON—E. W. Palmer, Fullerton, Cal.
647,232.—VALVE CUT OFF—W. L. Russell, Oakland, Cal.
32,499.—DESIGN—G. H. Evans, Oroville, Cal.
32,500.—DESIGN—G. H. Evans, Oroville, Cal.
32,489.—DESIGN—M. D. L. Hartley, Dehesa, Cal.
32,475.—DESIGN—J. A. Thompson, Seattle, Wash.
647,063.—GRINDING WHEEL—J. H. Adanson, W. Melbourne, Victoria.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

TIRE HEATER.—E. Beeson, Fresno, Cal. No. 646,567. Dated April 3, 1900. The object of this invention is to provide a means for heating tires which are to be afterwards applied to vehicles. It consists of a shell with outwardly and upwardly divergent conical inner surfaces upon which the tire may be laid with suitable supports, a furnace for producing the heat, a flue connecting the furnace with the apex of the shell so the heat is discharged and directed along the floor of the cone and into contact with all parts of the tire. This guide or directing device is in the form of a second cone which lies above the tire and forms an annular conical space through which the heat is directed. Above the hole is a vertically movable conical cover or cap which fits over the lower one and there are counterweights and chains passing over suitable pulleys so that this portion can be raised to place the tire and depressed after the tire is in position. The device is so arranged that tires of any size can be heated therein, and provides for a great economy of fuel and a rapid heating.

COOLING AND VENTILATING ATTACHMENT FOR CARS OR VESSELS.—G. A. & R. F. Dunn, Dinuba, Cal. No. 646,522. Dated April 3, 1900. This is an invention for ventilating cars, vessels and other movable structures. It comprises the outer car body or wall and an interior wall of burlap or other fibrous material interior to the main walls and forming an interspace between the outer and main and the inner or burlap wall. Suitable passages are provided

with movable directing gates or valves and are made adjustable at the front end of the car so as to direct air into the space between the outer and inner walls, and screen cover openings are also made with devices by which either may be closed or opened. A tank of water situated in the upper part of the cars serves to keep the burlap wall moistened and the air which is driven into the space between the two walls by the motion of the cars is compressed and forced through this burlap wall into the interior of the car in a clean cool condition.

RAILWAY SIGNALS.—No. 647,097; April 10, 1900. John Jorgenson, San Francisco, Cal. This invention relates to a signaling device which is applicable to lines of railway wherever it is desirable to employ a signal, and particularly at the crossing of such lines. It consists of a signal including a concealing casing and a globe, one movable with relation to the other, with means for operating the signal comprising a vertically disposed solenoid, a weighted core movable into and out of the solenoid, a cord passing therefrom over a journaled drum, a corresponding cord passing over a second drum upon the same shaft connecting with the signal, so that the energizing of the solenoid will act to raise the signal and a latching device by which it is retained in its raised position after the solenoid has been de-energized.

MECHANICAL BILL-CARRYING APPARATUS.—A. W. Thierkoff, Redding, Cal. No. 646,509. Dated April 3, 1900. This invention is designed for the convenient arranging and posting of bills and the like. It consists of a desk having a hollow drum journaled and rotatable within the desk, and a sliding cover which is opened to expose the drum and closed and locked when not in use. The drum revolving within the desk thus constructed has slots made longitudinally through its periphery, and spring clamps are so mounted with relation to these slots, that a large number of bills may be conveniently carried upon the drum. The drum can be properly indexed to correspond with the ledger index, and there are openings through which the bills may be inspected or reached at will. Several bills can thus be arranged in one line depending on the length of the drum, and a number of slots will allow a large number of separate independent accounts which can be always easily reached.

Gold and Silver Product of California by Counties for 1899.

County.	Gold.	Silver.	Total.
Amador....	\$1,544,868	\$6,902	\$1,551,770
Butte.....	486,846	5,009	491,855
Calaveras...	1,265,564	9,813	1,275,377
Del Norte...	4,450	.....	4,450
El Dorado...	404,497	8,414	412,911
Fresno.....	18,142	.....	18,142
Humboldt...	69,059	.....	69,059
Inyo.....	114,187	57,529	171,716
Kern.....	863,414	6,810	870,224
Lassen.....	28,898	.....	28,898
Los Angeles	13,132	.....	13,132
Madera.....	73,758	292	74,050
Mariposa...	562,829	2,207	565,036
Mono.....	697,069	47,547	744,616
Nevada.....	2,171,510	17,784	2,189,294
Placer.....	1,100,081	1,206	1,101,287
Plumas.....	381,151	15	381,166
Riverside...	163,010	2,000	165,010
Sacramento.	115,906	.....	115,906
San Bor'dino	164,599	125,603	290,202
San Diego...	333,650	.....	333,650
Shasta.....	873,719	196,213	1,069,932
Sierra.....	450,115	359	450,474
Siskiyou...	991,771	100	991,871
Stanislaus...	10,000	.....	10,000
Trinity.....	590,510	1,086	591,596
Tulare.....	13,610	.....	13,610
Tuolumne...	1,635,769	15,111	1,650,880
Ventura.....	3,990	.....	3,990
Yuba.....	189,927	12	189,939

Total... \$15,336,031 \$504,012 \$15,840,043



GOOD WHEELS

MAKE A GOOD WAGON.
Unless a wagon has good wheels it is useless. **THE ELECTRIC WHEELS** are good wheels and they make a wagon last indefinitely. They are made high or low, any width of tire, to fit any skeln. They can't get loose, rot or break down. They last always. Catalog free. Electric Wheel Co., Box 10 Quincy, Ills.

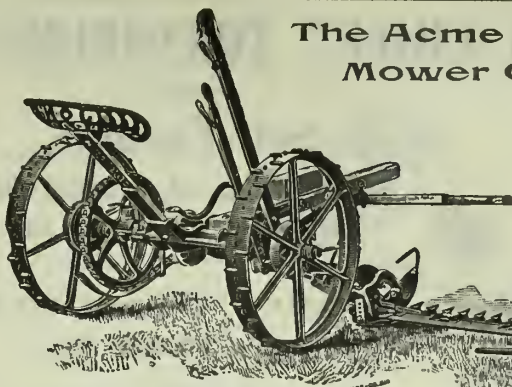


Steel Wheels for FARM WAGONS

Any size wanted, any width of tire. Hubs to fit any axle. For catalogue and prices write Empire Manufacturing Co., Quincy, Ill.

TREE WASH. OLIVE DIP.
"Greenbank" Powdered Caustic Soda and Pure Potash.

T. W. JACKSON & CO.,
Sole Agents, - No. 123 California Street, SAN FRANCISCO, CAL.



The Acme of Simplicity in Mower Construction.

As Neat as a Toy and Strong as a Giant.

THE JONES CHAIN MOWER.

No Noise. No Vibration. No Lost Power. No Cog Wheels to Wear Out.

Everybody knows that the sprocket and chain produces far less friction than cog wheels; that they are longer lived; that the application of power is more direct. Then why buy a geared mower that may work well enough when it is new and the gears fit closely? But it soon commences to wear, loss of motion occurs, and in a short time you need a new mower. WRITE FOR PRICES.

THE H. C. SHAW COMPANY, State Agents, STOCKTON, CAL.

What are Your Cows Worth?

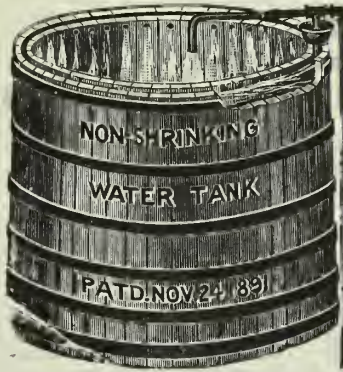
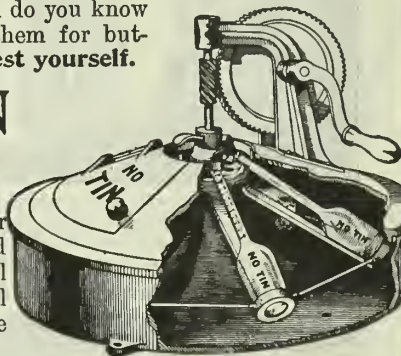
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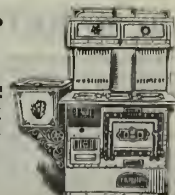
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Patrons of Husbandry.

Festal Days at Geyserville Grange.

TO THE EDITOR:—I was instructed by a vote of Geyserville Grange to send you the enclosed resolutions for publication. They were introduced by Hon. John Markley and unanimously adopted on Saturday, April 21:

D. W. SYLVESTER, Secretary.
Geyserville.

WHEREAS, It is the opinion of the members of this Grange that by mutual assistance, help and interchange of ideas and experiences we can advance our personal interests, build up the Grange and promote the general welfare of the community, therefore be it

Resolved, By the Geyserville Grange that Saturday, June 23, 1900, be and is hereby designated Grange Forage Day; that on that day an open meeting of this Grange be held in Remmel's Hall; that everybody is invited and urged to be present, and is earnestly to bring samples of grain, grass and forage of all kinds, with written or verbal statements of everything of interest connected with its seeding, cultivation, growing, curing, and its value as feed.

Resolved, That Saturday, October 27, 1900, be and is hereby designated as Grape and Olive Day; that an open meeting of this Grange be held in Remmel's Hall on that day; that everybody is invited and urged to be present and earnestly requested to bring samples of ripe, cured and pressed grapes, ripe and pickled olives and olive oil, with (if possible) written statements of everything of interest connected with preparing the ground, planting, cultivation, kinds, yields, etc., mode of pickling olives, success, variety recommended, yield of oil, etc.

Resolved, That Saturday, November 24, 1900, be and is hereby designated as Cured Fruit Day; that an all-day open meeting of this Grange be held in Remmel's Hall on that day; that everybody is invited and urged to be present and earnestly requested to bring samples of all kinds of green, ripe, cured and preserved fruit, with (if possible) written statements of everything of interest connected with the planting, grafting, fighting diseases of trees and fruit, pickling, shrinkage, percentage of pits or other waste material, curing, packing, etc.; also to bring written recipes for preparing the fruit for the table; that a free lunch be given on that day, consisting principally of ripe and cooked fruit.

Resolved, That a committee consisting of four ladies and four gentlemen be appointed by the master of this Grange, the Master being the chairman of the committee, said committee to make all the necessary arrangements for said meetings and to edit the matter presented for the newspapers, provided the papers are not present by representatives to make their own report.

Los Gatos Grange.

TO THE EDITOR:—As it has been some time since Los Gatos Grange has been heard from through the PACIFIC RURAL PRESS, I thought I would write a few lines and let our Brother Patrons know that we are still "scratching gravel" and digging up recruits. During the present quarter we have had eight applications, conferred the four degrees on two members, the third and fourth degrees on another, and had a harvest feast for these and several other members who had the degrees but had not been "feasted." The occasion was both joyous and refreshing.

Hereafter we expect to confer degrees only at the last meeting of the month, and devote all the time possible at the first meeting to educational features and less to routine work.

DISCUSSION.—At our last meeting we had quite an interesting and lively discussion on the merits and demerits of the California Cured Fruit Association, led by Bro. Sabin for and Bro. Lemon against. Before it was through the whole Grange "chipped in," and it was Bro. Lemon "against the field," and, though I say it that shouldn't, I think Bro. Lemon rather got the worst of it.

FARMERS' INSTITUTE.—There will be a Farmers' Institute held here in I. O. O. F. Hall, May 3rd, beginning at 10 A. M. and lasting through the day and evening. Profs. Fowler and Woodworth of the State University expect to be present to bear the brunt of the burden, and members of Los Gatos Grange and others will bring up the rear. We hope

to arrange an interesting and instructive programme and secure a good attendance, as these Institutes are of great benefit to any community that is so fortunate as to have them. We are trying to persuade the "horny-handed sons of toil" in the vicinity of Los Gatos that, if they will spend a day or two occasionally in learning to use their brains more, and their hands a little less, they would have less "horns" on their hands and more in the stockyard.
Los Gatos. O. B. WHALEY.

Co-operative Business Enterprises.

TO THE EDITOR:—No feature of the Grange appeals with greater force when presented for the first time to the average farmer, unfamiliar with the objects and purposes of the Order, than the co-operative business feature, for the matter of first importance to him is providing home and sustenance for those dependent upon him for support. How to accomplish this in the most advantageous manner, and with the least expenditure of time and money, is the thought uppermost in his mind. It matters little in what glowing pictures the benefits of the Grange in social culture, mutual development, moral reform, or in the grand principles of fraternity, are portrayed, for the industrious and thrifty husbandman will have a strong tendency to consider matters in an intensely practical way, and will lend his influence the readiest to a movement that promises to aid him in supplying wife and home with a fair share of the comforts and necessities of life. The founders of the Grange were sagacious enough to recognize this condition and prominent in the declaration of purposes was placed a vigorous declaration that one object of the organization was to aid its members in narrowing the gap between the manufacturer and farmer customer, and between the producer of farm products and the consumer of them. Briefly stated, this is the Grange platform upon business co-operation. This policy antagonizes no productive industry. The two great classes of the people are the producers and consumers, and the greater the number of people engaged in the handling of the products between the producer and consumer the less the price to the former and the greater the price to the latter. Our declaration of purposes well says: "We must dispense with a surplus of middlemen, not that we are unfriendly to them, but we do not need them."

The Grange made its first successful appeal to farmers upon the co-operative business feature. In fact, this was made more prominent than facts warranted, for deputies were allowed to solicit the support and membership of farmers upon statements in regard to the advantages of the Order as a means of establishing co-operative stores and conducting the mercantile affairs of the farmers at an immense financial saving that was not realized. This was a very seductive and alluring argument, resulting in the establishment of thousands of subordinate Granges with no idea of the objects and purposes of the organization entertained by the members other than the opportunity to purchase supplies at wholesale rates through stores conducted by themselves. This resulted in the downfall of nearly every Grange that depended upon this feature for success. There is, however, a true sphere for the operation of co-operative business features within this Order, and to find and adopt practical measures in this direction is the object of announcing the topic for discussion in the subordinate Granges of the State. When it was found that the plan we have mentioned was not workable as a leading feature of the Grange, there was a natural rebound in some sections of the country to the opposite position, and in some localities the co-operative business feature has been entirely neglected. While this condition is not particularly dangerous to the success of the Order, it is a sacrifice of an important and valuable feature of the Grange, applicable to all sections of the country and to all conditions of agriculture. We invite earnest study by the members of the Grange of this important problem, hoping it

may result in promoting the business features of the Order without detracting from the social, moral, educational and fraternal advantages which we all prize so highly.

The purchase of supplies through some co-operative business arrangement has been the most successful of all co-operative business features of the Order. By supplies we do not refer simply to the groceries needed in the household and the farming tools needed upon the farm, but to everything used by the farmer not produced upon the farm. This includes articles of wearing apparel, household furniture and building material, as well as live stock, feed, fertilizers, harvest supplies and fence material. It also includes insurance, both fire and life, telephone and electric light service, railroad transportation and postal facilities. Everything which the farmer purchases for cash or labor, or which he would purchase if it could be secured at wholesale rates, comes under the legitimate discussion of this question.

J. S. TAYLOR,

Lect. Cal. State Grange.
Napa, Cal., April 20, 1900.

Sonoma Pomona Grange.

At a meeting in Santa Rosa, April 19th, this Grange passed resolutions appealing to the Senate to agree with the House of Representatives in passing a constitutional amendment for the election of United States Senators by the electors of the several States.

Squire Coulter also introduced a resolution endorsing the action of Congress in the matter of the ownership of a cable from San Francisco to Hawaii, and asking the members of Congress to do their utmost to secure Government ownership of public utilities.

Santa Rosa Grange is planning to hold a children's day picnic on June 3rd. The committee appointed to select a place for the holding of the same consists of M. Townsend, S. T. Coulter and Mrs. M. M. Gregory.

San Jose Grange.

At a meeting April 22nd there was a large attendance. Eight new members were initiated.

The grave situation in regard to the California Cured Fruit Association's affairs was discussed thoroughly, and the following, among other resolutions, was adopted by a unanimous vote:

Resolved, By San Jose Grange, Patrons of Husbandry, that we recommend to every Granger and fruit grower that during this coming week he put forth every possible effort to convince those who have not signed of their error. This being done, we recommend that the names of those who still remain obdurate, an obstacle in the way of the entire community, be made public; that upon them, and them alone, may be heaped the censure for this failure of the cured fruit growers of California to co-operate in the marketing of their product.

Deafness Cannot Be Cured

By local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that can not be cured by Hall's Catarrh Cure. Send for circulars, free. F. J. CHENEY & CO., Toledo, O.
Sold by Druggists, 75c.
Hall's Family Pills are the best.

How to Mark Sheep.

An annoyance that sheep breeders have had to contend with has been the marking of sheep. Some requirements of a sheep-marking ink are that it shall be permanent, that it may be easily taken from the fleece when the wool goes to market, that it may be easily applied, shall be ready for use, that it shall not settle, evaporate or fade out before it is taken from the package, and that it shall make a distinct and lasting mark without in any manner hurting the wool or diminishing its price. Such an ink is hard to find, but Heath & Miligan Mfg. Co., paint and color makers of Chicago, claim to have such an ink, and are advertising it extensively this Spring, backing up their claim to have the only perfect material of this kind on the market with numerous testimonials from prominent sheep raisers who have used the ink for years. This firm is reliable in its line and sheep men might give this ink a trial.

SPRAY PUMPS.

Nozzles for Tree Spraying and Whitewashing. Disinfectants for Chicken Houses, Barns, Stables, Dairies, etc. Wainwright's Nozzles and Pumps are the Best and Cheapest. Catalogues sent. Agents wanted. Wm. Wainwright, Mfr., 1409 Jackson St., S. F.

THE VETERINARIAN.

Answers by Dr. Creely.

SPLINTS.

TO THE EDITOR:—I have a valuable mare eight years old, at present in foal, weighs about 1400 lbs. I notice that she has a lump on each side of her left front leg just below the knee. It feels as though it was a growth on the bone. Is it a splint? She does not go lame, though she acts as though it were tender to the touch. Could Dr. Creely prescribe anything for it? I have been working her on the mountains plowing in the orchard. She is in good condition.—SUBSCRIBER, Agnews.

It is a case of splints and harmless, and would no doubt disappear in time without treatment. I advise letting such things alone unless lameless exists. To remove it the following blister is used: Simple cerate, 4 ounces; bin iodide mercury, 6 drachms; turpentine, Venice, 1 ounce.

Mix, clip the hair and rub in thoroughly. Tie the head up so she cannot bite the blister. Three days later wash off and grease with vaseline. The blister can be repeated in three weeks.

INJURY TO MILK VEIN.

TO THE EDITOR:—I recently purchased a fine milch cow, but on account of sore teats she would not stand quiet while being milked. The man who milks her kicked or struck her on the milk vein and as a result there is a hard swelling right over the vein and quite large, but it does not seem to hurt her much, as she still gives a good mess of milk—about six gallons per day—but not quite as much as before she got hurt. I first noticed it about four days ago and it is still swollen about as bad as the first.—A SUBSCRIBER, Jamestown.

Apply the following lotion several times daily: Zinc sulphate, 1 ounce; lead acetate, 1 ounce; tinct. opium, 2 ounces; glycerine, 2 ounces; witch hazel, 4 ounces; water, 1 pint.

Mix; apply powdered boric acid to sore teats two times daily, after which apply camphorated oil.

LAMENESS.

TO THE EDITOR:—I have a mare that foaled on March 5th in pasture two days after a rainstorm occurred, and in getting her in the barn she did some running. The next day she was lame in left hind leg. I thought there was a soreness on inside of leg above hock and I applied a sweat blister for a couple of weeks without result. She limps only when she walks; trots or runs all right. She looks well and the colt looks fine. She gets no better or worse. Can Dr. Creely tell me what to do for her.—B. F. BALLINGER, Redding.

Let it alone and report in one month. I think your sweat blister will be sufficient. Don't work for a month.

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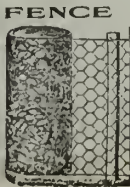
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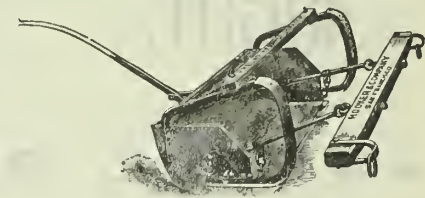
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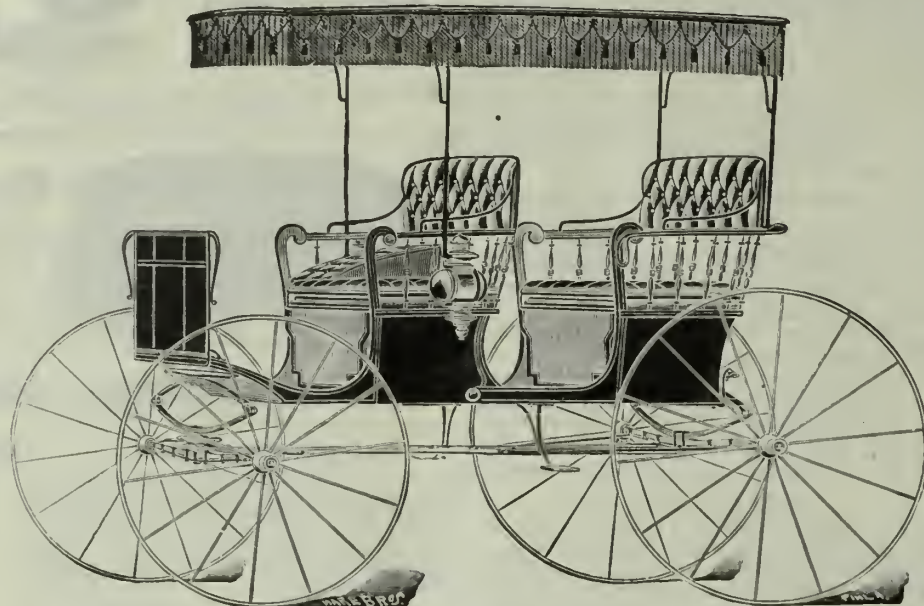
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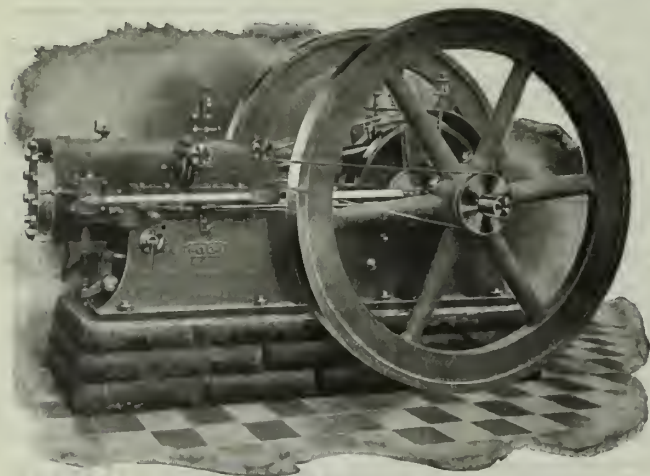
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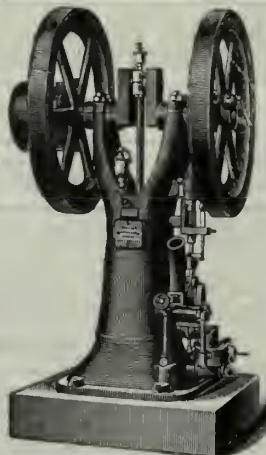
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 18.

SAN FRANCISCO, SATURDAY, MAY 5, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Transplanted Onions.

Growing onions from seedlings started in the seed bed and transplanted to the field has within the last few years gained considerable popularity at the East under the name of "the new onion culture." The procedure by transplanting is probably new as claimed in this country east of the Rocky mountains; but, as is shown by Wickson in his book on "California Vegetables," it is more than a quarter of a century old in California, and was brought to this

State by growers from the south of Europe, where it is probably a time-honored practice. Transplanting of autumn-grown seedlings is much more popular in California than growing from "sets," and is largely relied upon for the early crop. The practice could often be more widely followed with profit, as this spring's experience shows. Very profitable rates could have been gained for a month or more back for early maturing onions, grown on light soils in parts of the State with a warm winter and moderate rains. "California Vegetables" gives full accounts of California methods along these lines.

In view of these facts, we count it very interesting to call attention to some comparative trials made by Prof. F. A. Huntley of the Idaho Experiment Station at Moscow to show the standing of the two methods—from seed sown in place and from transplanted seedlings. This subject is fully discussed in Bulletin 22 of the Idaho station, and the engravings on this page show how the several varieties named behave under the two methods of culture. Prof. Huntley rightly remarks that some varieties are best adapted to the old methods of culture, while others will not succeed well except by the new method, owing chiefly to their adaptability to warm seasons and a prolonged growing period. All varieties, however, succeed well by planting early in hotbeds and transplanting. The pictures show the contrast between the two methods clearly in the superior size of the transplanted bulbs. The size and yield in bushels, as shown together in the following table, is compiled from the bulletin mentioned:

TRANSPLANTED.

Variety.	Lbs. in 100 ft. of row.	No. of bulbs.	Bu. per acre.
Prizetaker	180	200	1,393
Wethersfield	120	206	928
Y. G. Danvers	104	203	805
Austral. Brown	80	200	619

SOWN IN PLACE.

Variety.	Lbs. in 100 ft. of row.	No. of bulbs.	Bu. per acre.
Prizetaker	170	520	1,316
Wethersfield	90	480	696
Y. G. Danvers	120	486	928
Austral. Brown	74	432	571

In Prof. Huntley's experiment the transplanted plants were raised in a hotbed to a size averaging about three-sixteenths of an inch in diameter when they were transplanted to the open ground. On the date of transplanting, seeding was done in the open ground, duplicating the varieties transplanted. Plats were all adjacent on the same kind of soil. All rows were 12 inches apart. All the rows were given the same kind of care and cultivation excepting it was necessary to thin the plants grown by seeding in the open ground. The transplanted plants were placed about 6 inches apart in the row, but it was afterwards found that 4 or 5 inches would have been a better distance. It was intended

to thin the open-ground seeding to the same distances; but there being plenty of room for the bulbs without crowding, they were left much closer. This is shown by the count of more than double the number of bulbs shown in the second table as compared with the count in the first. It can be seen that a corresponding distance to the first would have reduced the yield in the second table very considerably.

A comparison of each of the four varieties is shown in the cuts. The pile on the right in each picture shows the best of nine selected samples by transplanting, and the one on the left shows the same number of the same variety of the best bulbs by open ground seeding.

It has been noticed that Prof. Huntley proceeded by growing seedlings in hotbeds, and that is the usual Eastern practice. In proper places in California the seedlings can be grown in the open air on light, warm soil which does not retain excessive moisture, and the transplanting method is therefore more cheaply employed in California than in regions with cold winters.

Andrew S. Hallidie.

Andrew S. Hallidie died at his San Francisco residence on the 24th ult., of heart disease, in the 65th year of his age. He was one of San Francisco's foremost citizens, and his fame is world-wide as the inventor of the cable railway street car system, which he first put in practical operation in San Francisco

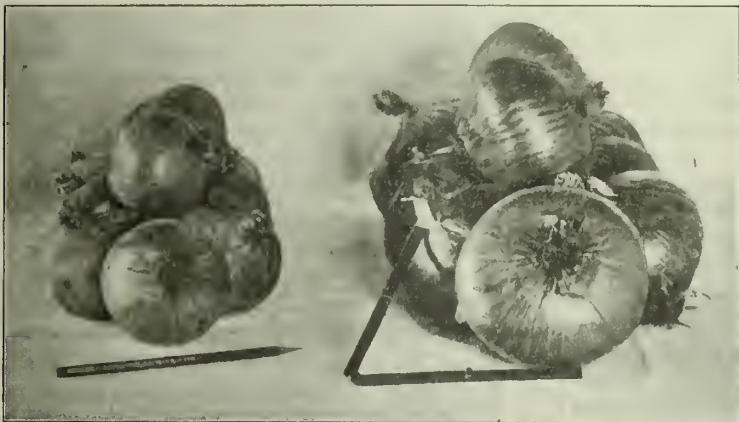


August 25, 1873. He was of Scottish birth and came to California in 1852. He held numerous positions of trust and honor in commercial, manufacturing and educational lines. He was a regent of the University from its establishment to his death and promoted its interests untiringly. He was particularly interested in horticulture and deeply enjoyed relaxation on his farm in San Mateo county.

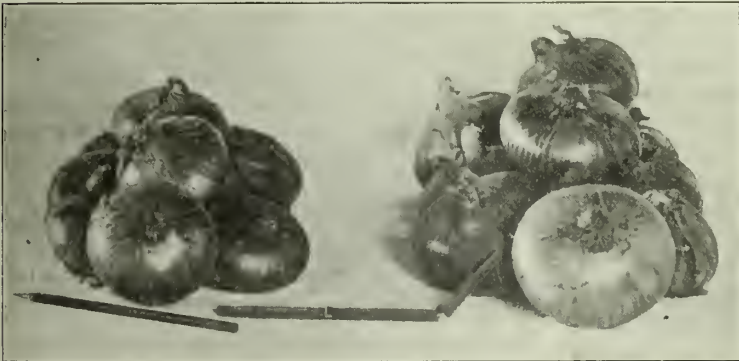
Personally Mr. Hallidie was one of the quietest and most unassuming of men. He was of constant aid to young men, always ready with genial counsel and substantial assistance, and to the last took an active interest in everything pertaining to the industrial and public welfare of his adopted city, for whose material progress he did so much. All his life he went around doing good, and made the world to a marked degree better for his having lived in it.

OPEN GROUND SEEDING.

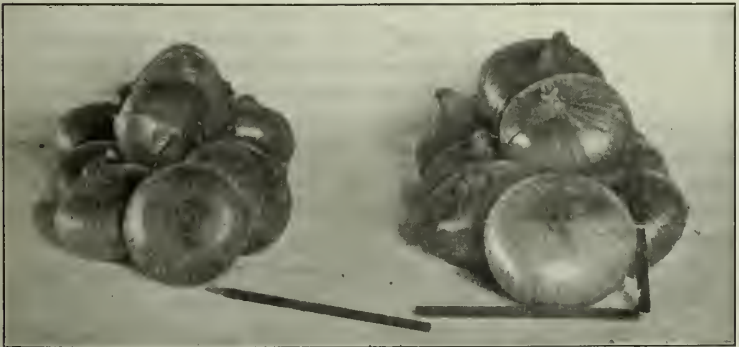
TRANSPLANTED.



Prizetaker.



Wethersfield.



Yellow Globe Danvers.



Australian Brown.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, May 5, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Transplanted Onions—Prizetaker; Wethershead; Yellow Globe Danvers; Australian Brown; Andrew S. Hallidie, 273.
EDITORIAL.—Transplanted Onions; Andrew S. Hallidie, 273. The Week; The Crown Knot Untied, 274.
QUERIES AND REPLIES.—Brown Apricot Scale; Syrphus Flies and Prune Aphids; The Raspberries; Foxtail in Silage; Alfalfa Hay; A Tree Hopper; Correl, 275.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending April 30, 1900, 275.
CEREAL CROPS.—Wheat Crop of the World; Six-Rowed Barley for Brewer; The Opportunity in the Orient, 276.
THE FIELD.—A Proposition to Regulate Hop Products, 276.
AGRICULTURAL ENGINEER.—Watering the Public Roads, 277.
THE IRRIGATOR.—A Study of the Water-Right Problem of California, 277.
THE DAIRY.—The Outlook for the Dairy in Southern California, 278.
AGRICULTURAL REVIEW.—279.
THE HOME CIRCLE.—The Dinkey-Bird; The Wooing of Meriel Ray; He Engaged the Boy; Don't Answer Impertinent Questions; Coffee and Hospitality, 280. In Housecleaning Time, 281.
DOMESTIC ECONOMY.—The Cooking of Fish; Domestic Hints, 281.
THE MARKETS.—Produce Market; Fruit Markets, 282-283.
THE VETERINARIAN.—Fatal Effects of Green Sorghum; A Case of Anthrax; Amateurs' Garden Book, 284.
PATRONS OF HUSBANDRY.—The Grange and its Destiny; San Jose Grange; Co-operative Business Enterprises, 287.
MISCELLANEOUS.—Prune Yield in Santa Clara Valley, 278. List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents; Industrial Notes, 285. Forestry Notes, 286.

The Week.

Soft and moist weather has followed the dry winds of last week—the best possible sequence for the growing crops and troublesome only to the hay maker and the early fruit man who is gathering his cherries. The benefit to the plants as a whole is very marked; even the leaves seem nearly twice the size they displayed while the dry winds whistled through them. Southern California has had quite a soaking, which will help the suffering trees and the summer crops in field and garden, though too late for the growth which should have been made during the winter. These rains will prolong the pasturage season and thus help every one who has stock to feed, which, unfortunately, too many farmers have not. Fruit reports are on the whole encouraging, and the crop will bring the State a good large lot of money; but we still see indications of exaggeration on the part of those who want to buy fruit at low prices. It is too soon to say that any fruit will be in excessive supply; the chances are that none will be.

The cereal markets are in the dumps this week. Values do not change, which indicates a strong undertone, but there is such indisposition to do anything that trade drags. Only one cargo of wheat and one of barley have gone out this week. Distant markets are not in bad shape and the visible supply has been reduced, but local buyers are very listless. Hay is no better. Some new oat hay from lower Alameda county has sold at \$6.50, which shows, perhaps, what buyers think of the situation; what the grower thinks of it would not do to print. All millstuffs are quiet and unchanged. Beef and mutton are easy and unchanged, and the inside figure for lamb is a little lower. Hogs are firm: seven carloads of Eastern have come in and have passed into consumption readily. Butter is held a little higher, but the advance makes slower movement, as it does with eggs also. With eggs the advance gives a chance to slip in Eastern. Cheese is taken rapidly for near-by trade; Eastern cheese is in small supply. Poultry is a shade weaker, but good stock holds out well; the drop comes on small and poor birds. Cherries are still selling well for good lots. Oranges are abundant and low—all except the finest fruit, which is not so. There is nothing new in dried fruit; a moderate jobbers' trade is going on and a chance of cleaning up well. Dry beans are quiet and steady and trade enough to hold values. Potatoes are not in heavy stock; both old and new are going off about as fast as received. Onions are in about the same shape. The wool business is still asleep; all hands seem to be holding aloof.

The Crown Knot Untied.

We do not refer to a happy solution of some vexed question of monarchical succession, though our title would befit such an issue, but we have in mind a demonstration of a vexed question in horticulture which has occasioned as great uneasiness as rights to thrones sometimes do. For more than twenty years fruit growers in California and experts in vegetable pathology everywhere have been at sea as to the specific cause of the excrescences at or near the root crown of various fruit trees and grape vines which have been variously called crown knot, crown gall, root knot, black knot, etc. For more than twenty years there have been large losses of trees and vines in both nursery and orchard, and commensurate disappointment and chagrin on the part of nurserymen and planters. For a decade the peculiar abnormal enlargements have been studied in the orchard and in the laboratory, and only negative results secured, although the investigation was conducted by the most able men both in this country and in Europe. It has been reserved for a Pacific coast botanist to demonstrate the matter and to define the particular agency by which the crown knot is caused, and the exposition is made, in terms which the scientific world will receive as conclusive, by Prof. J. W. Tuomey of the Arizona Experiment Station in Bulletin 33 of that station, which has just been issued. It is a consummation which will bring Prof. Tuomey due honor.

We cannot at this moment give such full declaration of the matter as its importance demands and reserve that for a later occasion, but we haste to summarize the conclusions that our readers may have the earliest possible information of them.

Prof. Tuomey demonstrated the contagious character of the disease in several ways. He examined volunteer almond seedlings growing under the trees in an Arizona almond orchard. Sometimes there were fifty to seventy of these seedlings under a single bearing tree. They were only a few months old and were from 6 to 30 inches high. He examined about 400 of them and in no case did he find a seedling with a crown knot growing under a tree which was free from the disease. On the other hand, he found in one case five diseased seedlings within 12 inches of the bole of a diseased tree. As the seedlings were at greater distance from the diseased crown of the parent tree they were free from disease, and the prevalence of the disease seemed directly proportional to the nearness to the source of infection.

The next method of demonstrating the contagious nature of the disease was by planting almonds in soil with which some minced knots was mixed, as compared with those planted in soil free from this mixture. In the two divisions of soil mixed with fragments of an old knot sixteen and seventeen diseased seedlings were found, while in the soil free from this mixture none were diseased.

Another demonstration consisted in inserting fragments of an old knot under the bark of healthy seedlings. Twenty seedlings were thus inoculated and all were afterwards found to be diseased—the disease being developed in every case just at the point where the incision was made.

Prof. Tuomey repeated these experiments and made others in similar lines, the results all being in verification of the conclusions just outlined. The deduction is clearly that the disease is communicable from a source of contagion to a healthy growth. The degree of susceptibility of different trees is also shown, but that is a side issue at this moment and can be shown later.

The structure and development of the knot, or gall as Prof. Tuomey prefers to call it, is most carefully made out. It leads up to the climax in the inquiry and that is the discovery of the cause of the disease. It is determined by Prof. Tuomey to be a specific organism belonging to what are called the slime-molds or myxomycetes. There are 200 species of slime-molds described in North America, and Prof. Tuomey gives the general traits of the class and then demonstrates his discovery with exact descriptions of the course of growth and reproduction which are intelligible only to a mycologist. He finds that the invading parasite is new to science and he creates for it a name of which it may well be proud, viz: *Dendrophagus globosus*.

The practical benefits resulting from Prof. Tuomey's work are these: We need no longer say that the cause of this disease is unknown. It is a specific parasitic organism. We need no longer wonder whether it is a contagious disease or not. Practice has proceeded for some time upon the correct assumption that it is contagious; we now know that such is the fact. We know also that trees from infected nurseries are dangerous. We know that contagion can be carried from tree to tree in the flow of irrigation water. Prof. Tuomey says also that the conclusion seems to be warranted that the contagion can be carried in old decayed galls as well as in fresh tissue. The spores are so small that they may be carried by the wind. The decayed galls which break from the trees may be carried by the cultivator to healthy trees adjacent. If bark at the crown or surface roots be broken in cultivation the wound gives the disease a chance to establish itself. Suckers at the root crown also make openings where the germs may enter.

The remedy for the disease has been ascertained by ample trial to be the mixture of lime and blue-stone, known as the Bordeaux mixture. We knew before that this would check the unhealthy growth. We know now why it does so—because the demonstration of the specific cause shows it to be one of the obscure growths which is destroyed by the copper preparation.

It is a great advantage to have this matter cleared up and remedial procedure placed upon a rational basis. Prof. Tuomey deserves a crown—without the gall, which too often accompanies a crown, both in the affairs of trees and men, for is it not written: uneasy rests the crown that wears a gall!

CO-OPERATIVE UNDERTAKINGS do not seem to be advancing with the impetus which has been hoped for them. The directors of the Raisin Association have announced that 75% of the acreages has not been secured, and that the three years' contract so far signed, amounting to 55% of the total acreage, will be returned to them, and that unless these growers take the matter of getting contracts signed in hand the association will fall to pieces. It seems that the packing proposition was the feather which seems likely to break the camel's back, and people are now charging the failure to an undue ambition. The Prune Association will make one more effort to fill its ranks. At a meeting held in San Jose as we go to press the executive committee has extended the time for signing contracts to May 19 by agreement with the packers. The association is still between 5000 and 10,000 acres short of 90% of the acreage of prunes over the State. This gap ought certainly to be closed up quickly. The enterprise is just on the verge of success; do not let it fall backwards.

GOVERNOR GAGE has appointed A. W. Foster of Marin county a regent of the State University. Mr. Foster is singularly qualified for this place by his deep and liberal interest in educational affairs and the respect which he wins from the public. We take particular interest in Mr. Foster's appointment because he knows the importance of our agricultural interests and the ways by which they can be educationally advanced, which is a manifest qualification for the regency of an institution established upon an agricultural foundation. Mr. Foster, too, is a broad man and excellent public service can be expected from him.

THE goat breeders of the Central States have organized the American Angora Goat Breeders' Association, which will establish and maintain a record of the Angora breed, which will be known as the "American Angora record." It is estimated that there are 10,000 Angora goats in this country eligible to record. The association will hold its first annual exhibition and combination sale on the second Tuesday in October in Kansas City. W. T. McIntyre of Kansas City was chosen secretary. We presume our California breeders will affiliate later.

WILLIAM BUNKER, representative of the San Francisco Chamber of Commerce, now in Japan, is of the opinion that there is no ground for fearing that Siberia will become a serious competitor of the United States in wheat raising. He says wheat grown in Eastern Siberia is inferior to the American product.

QUERIES AND REPLIES.

Brown Apricot Scale.

TO THE EDITOR:—I send you what I call "brown apricot scale." I find some of the orchards along the Sacramento river badly infested with this scale. My own orchard has been thoroughly washed with lime, sulphur and salt, but without effect. Kindly let me know what wash to use and what time it should be applied, together with what general information you may be able to give.—ORCHARDIST, Sacramento River.

The scale is the "brown apricot scale," one of the lecaniums. It is a very aggressive insect and hard to conquer by insecticides. Winter sprays are usually ineffective unless made so strong with caustic and arsenic that the bark is seriously injured. Spraying with kerosene emulsion or resin wash when the young insects are out is not fully satisfactory, because the trees are then in leaf and it is very difficult to reach the insects. And yet a summer wash should be used at once when the trees are as badly infested as yours are seen to be by the samples sent. Just about this time of the year very good results can be secured with either of the following washes:

KEROSENE EMULSION.—Take kerosene, two gallons; common soap, or whale oil soap, one-half pound; water, one gallon. Dissolve the soap in the water and add it boiling hot to the kerosene. Churn the mixture by means of a force pump and spray nozzle for five or ten minutes. The emulsion, if perfect, forms a cream which thickens on cooling. Dilute, before using, one part of the emulsion with nine parts of cold water. To obtain this emulsion in proper form violent agitation is necessary, the time required depending on the violence of the agitation and temperature of the mixture. Prof. Cook's formula is this: "Dissolve in two quarts of water one-fourth pound of hard soap by heating to the boiling point, then add one pint of kerosene oil and stir violently from three to five minutes." This is best done by use of the force pump. This mixes the oil permanently, so that it will never separate. Add seven pints of water and the wash is ready for use.

RESIN SOAP.—Take twenty pounds of resin, two and one-half pints of fish oil, three and one-half pounds caustic soda (98%), and enough water to make 100 gallons. Place all the ingredients together in the boiler, with water enough to cover them 3 or 4 inches. Boil from one to two hours, occasionally adding water until the compound resembles very black coffee. Dilute to one-third the final bulk with hot water, or, if cold water is used, add very slowly over the fire, making a stock mixture to be diluted to the full amount as used. When spraying the mixture should be perfectly fluid and without sediment. This mixture can be used twice or three times as strong on deciduous trees when dormant.

Though right use of these will reduce the scale in a marked way, the real hope of riddance of this pest is in the introduction of its effective enemy, a minute chalcid fly (*Comys fusca*), which has practically destroyed it in the San Jose district, where the pest first appeared. Ed M. Ehrhorn, horticultural commissioner at San Jose, has given much attention to this beneficial insect in connection with Dr. Howard of the Washington division of entomology, and they have found that from 80% to 100% of the scales are sometimes parasitized. This being so, it is easily seen why the brown apricot scale is no longer considered a menace in that region. The proper thing to do in all infested districts is to secure the introduction of this parasite. We believe Mr. Ehrhorn is now in Mexico on leave of absence. We have no doubt that Capt. H. A. Brainard of San Jose, who is fully informed on the subject, would undertake to obtain the parasite at the proper time for those who desire to introduce it in their orchards.

Syrphus Flies and Prune Aphis.

TO THE EDITOR:—Enclosed please find specimens of lice and flies that are on our prune trees; they are always together, and I would like to know the name of the flies, and do they prey on the lice or not? I have watched them, but can not see that they bother the lice.—W. J. S., Wooden Valley, Napa county.

You have sent us specimens of one of the syrphus flies—large, somewhat bee-like flies in their general aspect and motions—but you will see they only have one pair of wings. They are distinguishable by this fact and by the conspicuous white or golden bars they have on their abdomens. As you say, they are always buzzing about plants which have lice on their leaves and darting down frequently to deposit an egg among the lice. The flies do not eat the lice, but the egg soon yields a greenish grub which has an extension feature in his forward end which enables him to keep solid on his base and reach out here and there to catch an aphis in his jaws. The grub is blind, but he keeps dipping around among the lice until he catches one; then he holds it up and draws out the

juices. Look among the lice and you will find these grubs and bless the fly which makes them.

The slim, brownish yellow beetle which you send with the syrphus flies is a podabrus. He is also a friend and an aphis eater. He takes them for himself; he does not operate solely for his descendants as the syrphus fly does.

The Blaspberries.

TO THE EDITOR:—Please give me information on the following points in regard to the raspberry-blackberry hybrids: 1. How far apart should they be set? 2. What kind of soil is best? 3. Their adaptability to other kinds of soil? 4. What are the comparative merits of the Logan berry, the Primus and the Phenomenal?—C. R. CORNING, Lompoc.

Probably the best distances for these trailing plants is 4 feet apart in rows 6 feet apart, allowing the vines to run in the row, which has a chance to widen somewhat and still allow space for cultivation and irrigation. If irrigation is used, the soil is worked so as to leave a slight ridge for the vines to run on, thus forming a shallow ditch for the water between the ridges. In garden work, posts and two wires make a very satisfactory trellis. The best soil is a rich deep loam, with enough clay to hold moisture well. Other soils can be used, if additional care is taken to keep the moisture supply right. We can not answer as to the comparative merits, as comprehensive data is not available. We have heard individual statements, but they are too conflicting to yield conclusions. The Logan berry is much the most widely grown in California at present, but it has had the advantage of earlier introduction and more zealous local distribution.

Foxtail in Silage.

TO THE EDITOR:—Can foxtail, mowed when the heads are green and stowed away in the silo, be converted into a useful feed for cows? At present, except as an early winter feed for cattle, foxtail seems a colossal curse to the farmers of this State. It will probably spoil my second, as well as my first, crop of alfalfa. What is the best book about silos and ensilage?—A SUFFERER, Bakersfield.

Yes; foxtail cut soon enough and put in the silo with the alfalfa which it infests makes excellent silage. Thousands of tons of foxtailed alfalfa have been cut and burned or hauled away to rot, because people do not know that it can be profitably siloed. The best book on silage is by F. W. Woll. It is given away by manufacturers of machinery for cutting crops for the silo. Dealers in dairy machinery have it for distribution.

Alfalfa Hay.

TO THE EDITOR:—How much alfalfa hay will a cow eat per month if fed that exclusively?—READER, Dos Palos.

That depends, of course, on the cow, as it would depend on the man in eating codfish. Even with equal appetite, the amounts would vary as to capacity, which, with farm stock, is usually roughly proportional to the weight of the animal. It also varies as to the activities of the animal. To answer, in a word, the range would probably be from thirty to fifty pounds per day.

A Tree Hopper.

TO THE EDITOR:—I send to-day an insect which I cannot find described in "California Fruits." What is it?—C. REEVES, Chico.

The insect is one of a very grotesque group known as tree hoppers. They have a general triangular shape, but are marked by various extensions which give them something of a clownish air. Some have the back drawn up into a hump, and others the prothorax drawn out into a single projection or into two projections, like horns. The insects are injurious to plants, so far as they go, but they do not occur in sufficient numbers to make their work noticeable; so they are not included in "California Fruits," though one may run across them on fruit trees and can generally recognize them by their striking shapes as belonging to a group of which the scientific name is membracidae.

Sorrel.

TO THE EDITOR:—I have a piece of land that has sorrel top growing on it which is destroying other crops. What is the best way to get rid of it?—J. C. ZUCK, Gilroy.

The application of lime is a time-honored prescription for killing sorrel, and it is about the only thing,

except manure, which we can mention. Sorrel generally takes possession of land which is somewhat worn, and feeding the land will encourage better plants to strive with it for possession. The best way to reduce it where a cultivated crop can be profitably grown is to break up the land and grow a crop which requires summer cultivation. Sorrel does not enjoy being disturbed.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 30, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

SACRAMENTO VALLEY.

The weather has not been altogether favorable during most of the week. High northerly winds dried the soil somewhat, damaging fruit trees to some extent, and probably injured grain in sections. The temperature has been below normal most of the time, but no frosts have occurred. The end of the week has been marked by gentle showers and light south wind. Grain continues in good condition generally, most reports stating that damage from high winds will be slight, and in some localities no damage was done. It is probable that the yield will not be materially affected. Gentle showers at the present time are very beneficial. Deciduous fruits were blown from the trees in some sections, but the reports thus far do not show any serious damage. Orange trees are in full bloom. Haying and potato digging are in progress.

COAST AND BAY SECTION.

The north wind during the early part of the week dried the soil and caused some injury to deciduous fruits in places. Toward the close of the week conditions were more favorable, and light showers benefited grain and pasture. Hay matured rapidly and is now being harvested; there is a heavy yield, but the quality is said to be below average. Grain is still in good condition in most sections and will probably yield not far from an average crop. Deciduous fruits are making favorable progress, and a good crop is still expected, except in a few localities where the fruit was injured by frosts early in the month. Even in those places it is now reported that the damage was less than estimated.

SAN JOAQUIN VALLEY.

The weather has been partly cloudy and cool during the past week. High northerly winds prevailed over most of the valley on Wednesday and Thursday, and light showers fell generally Sunday and Sunday night. The wind did little or no damage, owing to the generous rains of the previous week and the showers which followed them on Sunday. There was less damage to the hay crop by the rain of last week than was at first supposed. The late rains have proven very beneficial to all crops, especially the late sown grain. A week ago it was thought much of this would only make hay, but it will now make a fair crop. Reports from all sections are favorable for a large crop of all kinds of fruit. Alfalfa is looking well. Haying will be general this week, with indications of a fine crop. No frosts occurred during the week. General outlook for grain and fruit crops is very encouraging.

SOUTHERN CALIFORNIA.

Cooler weather has prevailed during the week, with considerable cloudiness and no frost. Rain on the 27th was quite general in the southern counties. In some sections the precipitation was too light to benefit crops, while in others it amounted to more than 1 inch, and greatly improved the condition of some of the late sown grain and pasture. Hay was slightly damaged in some localities. Orchards and vineyards were materially benefited by the rain. Deciduous fruits are backward, but a fair yield is predicted. Citrus fruits continue thrifty. The heavy rainfall, with snow in some of the mountain districts, will be of great value in replenishing the storage supply for irrigation.

LOS ANGELES SUMMARY.—General rain near close of week benefited growing crops and orchards, damaging some hay. Snow fell heavily in mountains. Hail in places injured young growth of fruit on citrus trees. Some frost, no damage.

EUREKA SUMMARY.—High northerly wind resulted in no material damage to crops. Orchardists apprehend that much longer continuance of high winds will affect cherry and prune crops, and probably cause blight and dropping of fruit.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, May 2, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka.....	.00	47.98	33.24	40.71	40	74
Red Bluff.....	.22	21.93	20.07	24.88	44	84
San Ramon.....	.88	17.92	14.01	19.23	46	80
San Francisco.....	T	18.10	16.00	21.68	44	60
Fresno.....	.41	8.34	7.18	8.37	44	78
Independence.....	.61	3.43	1.16	4.48	36	64
San Luis Obispo.....	.00	15.82	16.41	16.40	36	68
Los Angeles.....	.02	6.06	4.97	16.75	40	70
San Diego.....	.78	4.34	4.94	9.27	50	64
Yuma.....	.46	1.29	1.34	2.85	50	84

CEREAL CROPS.

Wheat Crop of the World.

The statistician of the U. S. Department of Agriculture has issued a statement showing the wheat crop of the world for the five years, 1895 to 1899. This statement includes the department's first estimate of the crop of 1899 and a revision of estimates of the four preceding years. Official crop reports of the countries enumerated have been utilized where such reports were obtainable; in a few instances, where official data were not issued or had not yet been received, estimates have been based upon the information which seemed most trustworthy.

Commercial interest in this statement naturally centers in the crop of which a portion still remains in the hands of producers and dealers—the crop of 1899. The sufficiency of this crop to supply all demands during the present crop year would seem to be incontestable. The aggregate world's production in 1899 amounted to 2,725,407,000 bushels, a decrease, it is true, of 195,638,000 bushels, or a little less than 7% from the crop of 1898; but, compared with the average of the four preceding years, 1895 to 1898—a comparison which is obviously more satisfactory—the 1899 production shows a decrease of nearly 6½%, or, expressed in quantity, of 161,833,000 bushels. The increase from year to year in the amount consumed, a fact that is universally conceded, has doubtless so enlarged the absorptive capacity of the markets that last year's crop may prove no more than sufficient for consumption and necessary reserves.

The variation in the quantity of wheat produced on each continent in 1899 from the quantity produced on the same continent in 1898 was as follows:

	Bushels.
North America (decrease in 1899).....	136,039,000
Europe (decrease in 1899).....	80,154,000
Asia (decrease in 1899).....	35,575,000
Africa (decrease in 1899).....	10,830,000
South America (increase in 1899).....	45,728,000
Australasia (increase in 1899).....	21,232,000
World (decrease in 1899).....	195,638,000

A simple statement by continents of the variations of the crop of 1899 from that of 1898, resulting in a considerable decrease in the first-mentioned crop, does not, however, bring out the important feature of the situation. A comparative statement of the proportion of the total world's crop which each continent has produced annually will serve the purpose. As a matter of interest, the proportions are given for the five years:

PERCENTAGE OF WORLD'S CROP PRODUCED ON EACH CONTINENT.					
Continents.	1895.	1896.	1897.	1898.	1899.
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.
North America.....	20.61	19.59	26.68	25.96	22.83
Europe.....	56.31	60.21	51.85	54.08	55.02
Asia.....	16.62	15.13	16.79	14.88	14.65
Africa.....	1.97	1.74	1.67	1.60	1.32
South America.....	3.24	2.30	1.77	2.28	4.12
Australasia.....	1.25	1.03	1.24	1.20	2.06

A fact that strikes the attention especially in the table of percentages is that Europe, which has already been shown to have produced 80,154,000 bushels less wheat in 1899 than in 1898, actually produced a greater percentage of the total world's crop in 1899 than in the previous year—55.02% in 1899 against 54.08% in 1898. Moreover, if the year 1897 be included in the comparison, it is noticeable that the trend of the percentages of the world's crop produced on the European continent in the years 1897, 1898 and 1899 has been in a directly opposite direction from the trend of percentages of production in North America. The European production, which reached the low point of 51.85% of the world's crop in 1897, rose in 1898 to 54.08% and to 55.02% in 1899; the North American production, on the other hand, which was 26.68% of the world's crop in 1897, fell in 1898 to 25.96% and in 1899 to 22.83%. The opposing trend of production, as related to the total world's crop, was of course due, in a small degree, to variations in the production of the four other continents.

Europe, it should be remembered, not only produces more than one-half of the world's crop, but consumes almost the entire world's surplus. North America, on the other hand, raises between one-fourth and one-fifth of the world's crop, and is the world's great surplus exporter. Between these two great wheat producing regions is transacted the bulk of the intercontinental wheat trade of the world. Prices are, therefore, certain to show more or less sensitiveness to changes in the proportions of the world's crop produced on each of these continents, the one an importer from necessity, the other the principal contributor of the world's surplus. In 1897 the exceptionally low proportion of the world's crop produced on the European continent—51.85%—furnished a substantial basis for an advance in world's prices. The high proportion of the same year's crop produced in North America—26.68%—gave this continent a controlling position in the situation. But for the slight increase in the percentage of the 1897 world's crop produced in Asia and Australasia, it is

evident the North American control would have been practically complete. Since that date a reversal of these conditions in Europe and North America, especially marked in 1899, has probably had some influence in maintaining persistently low prices for wheat in spite of a very marked upward tendency in many other products of agriculture. A second depressing influence upon values has been the important increase in 1898 and 1899 in the percentage of the world's crop produced in South America and Australasia, both active competitors of North America in the markets of importing Europe. But another important influence is the abundance of the rye crop, especially in 1899; for a careful study of the movement of the prices of wheat through a considerable series of years shows that they are materially affected by an abundance or a scarcity of the other great European bread grain.

About 95% of the wheat crop of the world is produced in the northern hemisphere. Moreover, that half of the globe not only consumes its entire product, but a heavy proportion of the crop of the southern hemisphere has of late years been transported across the equator from Argentina and Australasia to the European markets.

In years of average production over 75% of the wheat crop of the world is produced in the seven principal producing countries of the northern hemisphere. The proportions which each of these seven nations has contributed to the world's supply for the past five years is given in the following table. The countries are arranged in the order of their relative importance as producers:

PERCENTAGE OF WORLD'S WHEAT CROP PRODUCED IN EACH OF THE FOLLOWING COUNTRIES.					
	1895.	1896.	1897.	1898.	1899.
	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.
United States.....	18.01	17.06	23.73	23.11	20.08
Russia.....	17.82	18.11	17.02	17.10	17.88
France.....	13.13	13.16	11.04	12.44	13.43
India.....	9.84	8.21	8.56	8.89	8.53
Austria-Hungary.....	8.11	8.20	5.72	6.47	7.94
Germany.....	4.49	5.01	5.37	4.54	5.19
Italy.....	4.56	5.79	3.89	4.70	5.06
Totals.....	75.96	75.55	75.33	77.25	77.21

Of the seven countries enumerated above, three alone—the United States, Russia and India—produce an important excess over their own consumptive demands. Austria-Hungary is also an exporter, but on a scale suggested by the low percentage that she produces of the world's crop. France, under the incentive of a high protective tariff on wheat, endeavors, with varying success from year to year, to meet her own consumptive demands. Germany and Italy are importers, the latter an important customer on the Russian markets.

Six-Rowed Barley for Brewer.

TO THE EDITOR:—I beg to draw your attention to some few circumstances which are of interest to farmers and brewers on the Pacific coast, and will state that it is on account of advice from Joseph Jost, distiller, that I take the liberty to address you on the subject.

As far as known to me, no farmer here is cultivating the so-called six-rowed barley, but the common product is the Chevalier barley. Now it is a fact that Chevalier barley, good and preferable on many occasions, is, as regards the production of barley malt, always inferior to the six-rowed barley. I will state that in the brewing industry in the East only the six-rowed barley is used in making malt. The malt made from six-rowed barley is far different from malt made from two-rowed, and, as long as the brewers in California or elsewhere on the Pacific coast can not get the six-rowed barley, they will have to work with many difficulties in making their beer. It would be very desirable if the breweries and malt houses could get the six-rowed, instead of the two-rowed barley, and I would appreciate it very much if you would take some interest in the question and probably persuade some farmers to introduce in California the six-rowed barley. I would be very glad to communicate with you about the question, and will state that the main advantage of malt of six-rowed barley is its high saccharifying qualities and its considerable amount of desirable albuminoids. HANS C. HOLM, Brewing Expert.
249 Second street, S. F.

Six-rowed barley was introduced in California some years ago by the University and the seed was offered for trial in this State. But little interest was manifested in it, from the fact, we presume, that Chevalier barley and other kinds of two-rowed brewing barley were acceptable to the buyers. There will be no difficulty about getting a supply of the six-rowed barley grown if the brewers would undertake to contract with the farmers for it. They should import the particular seed which they find best for brewing purposes, just as the sugar beet manufacturers import their seed and furnish it to the farmers who grow the beets for them by contract; this would be the quickest way to secure a variety most acceptable to the brewers. It is a very slow operation to undertake to

change the varieties which are acceptable in open market.

A LATER LETTER.

TO THE EDITOR:—Your communication of April 27 duly at hand. I thank you for drawing attention to the matter and shall add some few points as regards the advantages of the six-rowed barley. According to researches made in the laboratory of Wahl & Heims' Scientific Station for Brewing, Chicago, Ill., the malts from the six-rowed barley are richer as well in diastatic as in peptonizing power, so that no difficulty is encountered in the inversion of the starch contained in the malt, and large amounts of starch from unmalted cereals can be easily inverted. Furthermore, the worts obtained from such malts are richer in albuminoids, and the undesirable albuminoids are much more readily precipitated by boiling and by the subsequent cooling than in worts produced out of malts from two-rowed barley. In any respect the six-rowed barley grown in Wisconsin, Minnesota and Iowa is superior to the two-rowed barley grown in Dakota, Montana and Utah, so far as the brewing industry is concerned.

In the near future I will propose a meeting of the local brewmasters in order to discuss the question, and I will take the liberty to inform the PACIFIC RURAL PRESS of the results of the meeting.

HANS C. HOLM, Brewing Expert.
Brewing Station, 249 Second street, S. F.

The Opportunity in the Orient.

The announcement of a large wheat shipment to Japan sent from a Pacific port lends interest to some figures which the Treasury Bureau of Statistics has prepared regarding the growing demand for American foodstuffs and manufactures in the Orient. Nearly \$6,000,000 worth of our flour went to the Orient last year, against about \$4,000,000 worth in the preceding year, and nearly all of it to China, Japan and Asiatic Russia, the large proportion of that which reached China passing through Hongkong, to which it was accredited in our export statements. Shipments of breadstuffs in the form of wheat to the Orient, however, have been in the past rare, and the large shipment of wheat just announced shows the growing demand for our breadstuffs in that section of the world which buys annually a billion dollars' worth of goods, and which has been in the past taking less than 6% of its purchases from the United States.

That our sales to the Orient are rapidly growing, however, is shown by the latest export statistics. They show that, while there has been a continued growth in our exports during the past fiscal year, by far the largest percentage of growth has been in our trade with the Orient. To Europe our exports during the eight months ending with February increased 5.4%, as compared with the corresponding months of the preceding fiscal year; to South America, 8%; to North America, 13.3%; to Asia, 38%; to Oceania, 51%, or to Asia and Oceania combined, 44%; while to Africa there was a slight reduction, owing to the disarrangement of commercial conditions there by reason of hostilities. Taking our exports as a whole, it is found that the increase during the eight months has been 9%, while, as already indicated, the increase to Asia and Oceania has been 44%.

THE FIELD.

A Proposition to Regulate Hop Production.

TO THE EDITOR:—The hop-growing industry has not been profitable for many years, and for what reason? The answer is very simple: overproduction. The brewing business can not keep pace with the increased acreage in hops. When you realize that but one pound of hops is used for one barrel of beer, and as you know that upon one acre of hops are grown an average of eight bales, or 1440 pounds—enough for 1440 barrels of beer—it is easy to see how, if we have an average crop year, it is that we have many more pounds than is necessary, and why we at times carry over from year to year large quantities of hops, and prices consequently low.

The brewing business has gained in production of beer within the last twenty-one years more than 21,000,000 barrels, or an increase of 1,000,000 barrels per year; but there was a decrease in production for the year 1899 of almost 1,000,000 barrels, so while there was this reduction in manufacture of beer the world produced a full crop of hops, making a large surplus alone, without considering the "carry over" in the growers' hands and brewers' stocks of crop of 1898, which was considerable, of "old olds" and "hop extract"—the latter cutting more figure in the hop market than the growers imagine.

STATISTICS.—To demonstrate how the surplus is arrived at, the following figures will show: The amount of beer manufactured in 1899 was 36,581,114 barrels, which, at one pound to the barrel (180 pounds to the bale), we find that 203,228 bales of hops were required. We grew in Washington 35,000 bales, Oregon 80,000 bales, California 56,000 bales, and in New

York 70,000 bales, or in the United States a total of 241,000 bales; add to that the amount—25,000 bales—imported, and we have 266,000 bales, but of which we have use for only 203,228 bales, leaving a surplus of 66,000 bales. This surplus might have been used up by England had she not grown nearly what she required; as it is now, she will take but about one-half of this surplus, and much of that will be forced on her by consignments, etc.; in any case, we shall have 25,000 to 30,000 bales to carry over into the 1900 hop year.

From the above figures and explanation we think you will agree that it is not the brewer, dealer, or the broker who hammers the prices down to "rob" or "break" the hop grower, but the simple proposition of supply and demand. If the crop is large and the stocks plentiful the brewer is in no hurry to buy, and then at only what he thinks they ought to be worth to him; on the other hand, if the crop is short and no stocks to amount to much in sight, he will be more anxious to buy at the price named by the seller. The hop grower is also guided in selling by the supply.

HOW TO REGULATE THE CROP.—Now, if we are convinced that "overproduction" is the cause of unprofitable prices, what must be done to overcome the evil? Certainly it is within the power of the growers to prevent growing too many hops. One way is to plow out part of your acreage; but in that case, should the world's hop crop be short, you would want all of your acreage to make you a fair average crop that you might take advantage of good prices that must result from short crops; therefore, we conclude that the better way would be to allow the present acreage to stand, make as big a crop as you can, and when it is within ten days of maturity, should it be shown by the growers informing one another that there is to be an overproduction, go into your neighbor's yard and he into your yard (or any other way) and cut down and destroy enough vines to equal the anticipated surplus. When you have only enough hops for consumption, the efforts of the dealers to get the best and the natural stubbornness of the growers will combine to advance prices so as to make hop growing pay well.

There are about 40,000 acres of hops in the United States, and to meet a surplus of 60,000 bales it would be necessary to destroy about 20%, or 8000 acres, as follows: 1300 acres in California, 2400 acres in Oregon, 1200 acres in Washington, and 2400 in New York. Should the indications show a surplus of but 30,000 bales, then but 10% only would be destroyed, and in like proportion to reduce any surplus; but, as said above, if the indications are for a crop enough or less than the requirements, none are destroyed, but every hop is picked and the grower can lay back and take his profits. It would be only a matter of a few hours for a grower of ten acres to destroy one acre, or two acres if necessary, and the matter of a day or so for a grower of forty acres to destroy four to eight acres.

HOW TO FIND OUT.—It is not a difficult matter, nor an expensive one, to obtain information from the growers in the different States. When the grower knows that he is the one to be benefited by simply filling out a blank giving his acreage and condition of his growing crop and his ideas as compared to his last crop—say once every two weeks—he will be glad to do it, and he will encourage his neighbor to do it also. These blanks could be sent out on a return postal card, and received by one man in each county, and a report made and sent to the central office or headquarters of the State. This head office of one State would report to the head office of another State, and so on until a complete report of all of the States was completed and a true state of the crop ascertained, and every grower could go to his county headquarters and see for himself just what the crop was doing elsewhere, and if the indications were for a surplus, then prepare to cut down his proportion of vines, but if crop indicated a shortage or just enough for requirement do not cut down but pick the entire crop cleanly, and cure properly, and wait for the buyers.

The question resolves itself into this: Would not the grower rather pick fifteen acres and sell at 20 cents than to pick twenty acres and sell for but 10 cents?

If systematically carried out it will solve the labor question, the surplus, low prices, and make the growing of hops a pleasant and profitable industry.

It is likely, after you shall have read this article, that you will conclude that the proposition is a good one and that you favor same, but that it is not practicable inasmuch as all the growers will not abide by the conditions. I would suggest, therefore, that you defer looking at the matter as impracticable until you have talked the matter over with other growers. Consult first your neighboring growers, and I feel certain that you will get them interested and finally no doubt obtain the co-operation of the growers throughout the United States (must have 75% of them at least), thus securing the desired result. This plan has been taken up by the Oregon, Washington and New York growers, who are forming clubs and will be ready to know what California is going to do. So get the growers in your vicinity together and organize; anyway let me know what you think of it.

GEORGE C. BREWER.

No. 1916 M St., Sacramento, Cal.

AGRICULTURAL ENGINEER.

Watering the Public Roads.

By JOHN ROLL, Supervisor of Santa Clara County, at the Supervisors' Convention in Fresno.

The matter of watering our public roads, as a measure for their preservation, as well as convenience and comfort in traveling, is no longer a question for argument. In Santa Clara county it has been demonstrated, by practical experiments extending over a period of more than fifteen years, that wherever water can be obtained there is no more economical method of keeping roads in good repair than by sprinkling them. In speaking of the economical side of this question I am referring solely to good roads. No amount of sprinkling can transform a poor road into a good road. But when a road has been properly constructed it can be maintained in good condition by the judicious application of water more cheaply and satisfactorily than in any other manner that has as yet been demonstrated. The people of this State generally consider sprinkled roads to be a luxury beyond the reach of any but very wealthy communities. This impression comes mainly from the fact that people estimate the expense at too high a figure and the value received at much less than it really is. Comfort in traveling is worth a great deal, but comfort is not the only thing accomplished by good roads. Economy in the power necessary to propel vehicles means a saving of money in horse flesh, a saving of money in the cost of feeding, a saving of money in the diminished wear of vehicles, and a saving of money in the time and labor saved in transportation. In Santa Clara county, as well as in many other fruit growing counties of the State, there is an additional source of revenue in good roads properly sprinkled. It makes it possible to deliver the products of the orchards to any cannery, factory or packing house within the county without being bruised by jolting over rough roads in transit, or becoming foul with the dust for which unsprinkled roads in California are notorious during the season of the year in which our fruit harvest occurs. The ability to do this puts as much money into the pockets of the taxpayers as the expense of sprinkling take out.

FACTS GENERALLY RECOGNIZED.—These facts are so generally recognized in Santa Clara county that the sprinkling of our public highways is no longer considered a luxury, but a money-saving investment of the public funds. But it must be borne in mind that before a road can be profitably sprinkled it must be put in good condition. I repeat the statement that you cannot make a good road out of a bad road by the simple application of water. The road must be properly graded and made level and smooth. Otherwise the water will accumulate and stand in the depressions, soaking the foundation and making it soft, so that the passage of the water wagons and other vehicles will tear it up and seep it out into ruts that will cost more to repair than the expense of properly constructing the roadbed in the first instance. But with the roadbed properly prepared to receive the water the subsequent expense for maintenance is but a trifle compared to the cost of repairing non-sprinkled roads. In Santa Clara county the greatest obstacle in the way of a general sprinkling of the highways has been the difficulty of obtaining a sufficient supply of water. In some counties this item would not occupy so prominent a position in the expense bill, while in others it might be larger. We have been compelled to adopt several different systems for procuring water for road sprinkling. In some instances we have been able to tap the streams in the adjoining hills, and to convey the water by means of pipe lines to storage tanks along such highways as could be reached in this manner. In other localities, where the distance from the surface to water is too great, we have sunk wells and erected tanks, which are filled by such power as we have found to be most available—sometimes by horse power, the teams that haul the water wagons being utilized for that purpose; sometimes by windmills and sometimes by the use of gasoline engines. Supervisor Rea of our county has in his district a combination water wagon which comprises both tank and engine, and which enables the wagon to take on a load of water from any well located on its route. He finds this system to work very satisfactorily. In raising water from wells we find that in localities where there are strong and constant winds the windmill performs the work in a very satisfactory manner. Our county also purchases a large amount of water from the San Jose Water Company, and also from private persons and corporations that have wells or pipes convenient to the roads to be sprinkled. The price paid for water varies from 10 cents to 20 cents per 1000 gallons, according to the supply.

THE ECONOMICAL METHOD.—The natural as well as the best and most economical method of obtaining water for road sprinkling purposes is by tapping the streams or springs in the high grounds. In such cases gravitation obviates all expense for power in filling tanks or wagons. In this connection I cannot too strongly urge upon the members of this conven-

tion the desirability of prompt action in securing such sources of water supply as are available in your several counties. The time will come, sooner or later, when the demand of the people for sprinkled roads will be imperative throughout the State. If you neglect present opportunities you will find in many instances that a compliance with the demand will so overtax your resources that you will be helpless. In many counties there are doubtless sources of water supply available for road purposes that can now be acquired at a trifling cost. In a few years it will not be possible to obtain them at any price that the county may be able to pay. You should anticipate the future in this matter and make investments now that will be invaluable to your respective counties a few years hence.

We have about 350 miles of sprinkled roads in Santa Clara county and about 150 miles of pipe line used for supplying water. We have several hundred tanks of varying capacity, besides numerous standpipes, engines and other facilities for loading the water. I would here make a suggestion in the matter of establishing pipe lines, to wit: The pipe should be of sufficient capacity to permit of any possible future extension. This is a lesson which experience has taught us in Santa Clara county.

Some statistics in regard to the water systems of the county which I have the honor to represent may not be uninteresting or unprofitable. The property owned by the county in connection with the road sprinkling systems is valued at about \$200,000, and has been acquired practically within the last twelve years. Our rate of taxation for road purposes during the last ten years has been 30 cents on the \$100. Last year an additional 10 cents was added for the purpose of constructing a number of brick and concrete bridges, and for paving several of our most important roads. The extra levy was not caused by any expense connected with the sprinkling of the public roads. The cost of our road sprinkling operations for the year 1899 was as follows:

Paid for water.....	\$ 7,158 90
Paid for sprinkling.....	21,008 35
Paid for water works.....	23,632 20
Total.....	\$51,799 45
Cost per mile for the year, including water works.....	147 70
Cost per mile for the year, excluding water works.....	80 40

The tanks on the water wagons have a capacity of 800 gallons, and this will sprinkle a quarter of a mile of road. Where supply tanks or standpipes are conveniently located one wagon will distribute on an average about thirty loads per day.

NIGHT SPRINKLING.—Two years ago we experimented with night sprinkling, and for the entire season watered our roads at night instead of in the daytime. We found that the evaporation from water applied in the night was about 25% less than that applied in the daytime. This was a great advantage, but there were great disadvantages that seemed to offset it, and the night sprinkling was discontinued. Some of the disadvantages were that the cost was greater, there was difficulty in getting men who would work at night with the same efficiency as in the daytime, and the impossibility of distributing the water as evenly in the night as in the daylight. A protest also came from the people living in the towns and those who were accustomed to ride in the evening after the close of business. Their objection was the roads being freshly sprinkled it was uncomfortable to drive in buggies or carriages, or to ride on bicycles. The objections from these sources were so numerous and persistent that night sprinkling was abandoned after one season's trial.

The figures given herein as to the amount of water that can be supplied to the roads under our system is for average roads in Santa Clara county. The more heavy the travel the more water will be needed and the less will be the number of miles per day that can be sprinkled per wagon. The number of miles that can be sprinkled by each wagon depends also on the condition of the road. If the road is in poor condition more water will be needed, and the difficulty in applying it will be greater than if the road is in good condition.

The statements made in this paper are founded entirely on the experience we have had in Santa Clara county in the matter of road sprinkling. Other counties have also had experience in this matter. If their experience has taught them anything different from what I have stated, it would be interesting and profitable to the convention to hear it.

THE IRRIGATOR.

A Study of the Water-Right Problem of California.

In response to a petition signed by many of the leading citizens of California, the U. S. Department of Agriculture has, through the irrigation investigations branch of the office of experiment stations, begun an exhaustive inquiry into irrigation conditions in this State. The petitioners say that "nowhere in America are there irrigation problems more important, more intricate, or more pressing than in California * * * [where] great sums have been lost

in irrigation enterprises, still greater sums are endangered, water titles are uncertain, and litigation is appalling."

During the last ten years the State supreme court has heard more than 100 irrigation cases, while many of the most important issues have been heard in the United States courts, some of them going to the U. S. Supreme Court. This litigation not only renders existing property rights insecure but puts a stop to further investment along this line.

In addition to the general work on the use of water in irrigation, which is being carried on in all the arid States, the work in California includes a comprehensive study of the whole irrigation situation, looking to the remedying of the evils which are checking development along this line in the State.

The work is under the general supervision of Elwood Mead, the expert in charge of irrigation investigations. The field work will be in charge of a corps of experts, including James D. Schuyler, of Los Angeles, Prof. F. Soule, of the State University, Prof. C. D. Marx, of Leland Stanford University, Messrs. C. E. Grunsky and Marsden Manson, of San Francisco, William E. Smythe, of Susanville, and J. M. Wilson, for several years the State Engineer of Nebraska.

The work being done on the streams and irrigation systems selected for investigation includes study of the following:

(1) Abstracts of the records of claims to water, character of those records, number of claims, total volume claimed, places where recorded, and the ease or difficulty with which the validity of any claim can be determined.

(2) Rights to water for purposes other than irrigation, namely, mining, power and domestic purposes.

(3) Methods by which the amount and character of water rights are determined, accessibility, and completeness of the record showing the nature of the established rights.

(4) Character of litigation over water rights, its causes and cost, its influence on irrigation development, and the principles established by decisions rendered.

(5) Rights for storage and underground waters, how acquired and how affected by rights to the surface flow of streams, and the influence of the underground waters on the stream's discharge.

(6) Nature of an appropriation of water. To determine who is the appropriator, the ditch builder or the owner of the land on which the water is used; or is the land itself the appropriator. Also to determine the true measure of its amount, the size of the claim, the capacity of the ditch, or the area irrigated.

(7) The volume of return or seepage water and its availability for being again diverted, and influence on value of irrigator's rights.

(8) Size, number, location, and capacity of ditches and other distributing works established, and irrigation duty of water.

The work also includes collection of data showing how water is divided among different ditches from the same stream; how it is distributed among users; the nature of water right contracts between canal owners and water users; what contracts have proven satisfactory; and what forms of contracts have given rise to controversy, and the reason therefor. Facts showing rates for sale or delivery of water and the methods by which these rates have been established will also be collected.

When the field work has been completed a conference of all those taking part in the work will be called and a thorough study of the data obtained will be made. It is hoped that the results will be published by the time the State Legislature meets, in order that the data collected and the conclusions drawn from them may aid in giving to California a code of irrigation laws which will protect present investments and remove all checks to the future development of agriculture by irrigation.

The work has the hearty co-operation of those most interested in the development of agriculture in California. It has been endorsed by the California Water and Forest Association, an organization whose object is the storage of water for irrigation, and the two great universities of the State have given the services of representatives of their faculties, without pay, except actual field expenses.

THE DAIRY.

The Outlook for the Dairy in Southern California.

By C. H. SESSIONS, Pres. Dairymen's Association of Southern California, at the Clearwater and Norwalk Farmers' Institutes.

This subject should have been given to one who is of a prophetic turn of mind and thinks he can look into the dim future. I do not claim to have such power, but will try to speak on the subject by referring to the past and the present.

It is now about sixteen years since creamery butter was made in this county, and then it was made on dairies which produced their own milk. Public creameries were not started until later, and then I think W. Harvey Smith of Norwalk started the first.

Since that time creameries and skimming stations have been started in all localities that would furnish 2000 pounds or more milk daily until this county is spotted with them. In spite of the fact of so many creameries, this market has never been supplied with local butter, and shipments from other sections have been a necessity, except for a short time in the spring, when a surplus is sometimes accumulated. In 1897, as near as could be estimated, over \$300,000 worth of butter was shipped in from outside of five southern counties. Since that time very few creameries have been started, and the production has increased but little, if any. The enlargement of the condensary at Buena Park has taken considerable milk formerly put into butter, and the rapid growth of the city of Los Angeles has caused quantities of milk to be sent there to supply that demand.

With these facts before us it would not indicate that there was any immediate danger of an overproduction of milk; or, in other words, just so long as quantities of butter are being sent here from the north and east, farmers need not hesitate to increase their herds.

CREAMERY ASSOCIATION.—About a year ago the principal creameries of Los Angeles and Orange counties organized what is known as the "Los Angeles Creamery Board of Trade," and represent over 2000 squares of butter a day. Weekly meetings are held and prices fixed for the following week. At those meetings each member makes a report of the butter manufactured the previous week, the amount on hand unsold, the conditions of the market are discussed so that a good understanding is had and the price fixed intelligently. By holding these meetings and holding firmly to the prices fixed, the amount of butter can not accumulate to any great extent, as the prices will be made at such figures as will keep out northern and eastern butter so long as we have a good supply of local. At these meetings the milk producers are taken into consideration and prices made as high as the market will stand; but it is not for their interest to make the price so high as to admit quantities of outside butter and leave our own unsold.

FRESH IN THE FALL.—A few moments ago I spoke of our market never being oversupplied except for a short time in the spring. At that time every cow in the country is giving milk and the most of it. This is unfortunate, but it is a problem that can easily be solved by the milk producers and no one is to blame but themselves. The greatest demand is in the fall and winter when milk is scarce and many cows dry. Why not have the cows come fresh in the fall as well as late winter and in that case get the greatest flow when here is great demand for the milk?

In early years every one depended on the winter and spring grasses for feed and the cows were trained to come fresh at that time when grass was plenty and the flow was continued, but when the grass dried off in May and June they naturally went dry on account of short feed. Many still keep up the practice of feeding very little in the fall and winter, as their cows are dry, but giving quantities of feed in the spring. Later years, more attention is being paid to better feeding, growing corn to feed fresh and for the silo, so that it is just as easy to feed at one season of the year as another.

The system of breeding cows so they will come fresh in the fall could become customary and the cows will acquire the habit of being fresh then as easily as the old-time habit of coming fresh in the spring. Begin with the young stock and weed out the old ones that cannot be changed.

ESSENTIALS TO SUCCESS.—I think the milk producers have this matter in their own hands and their actions really control the future of the dairy business. Just so long as they continue to carry on the business as has been done in past years, the outlook will not appear prosperous and they will at times receive what they consider poor pay for their work, but this can be changed by adopting new methods and doing their best to have the most milk when prices are high, and the least when the reverse. Consumers will always eat more when their food is of the best quality, but how quickly they lose the appetite for butter or milk when they discover anything wrong with them.

In order to make butter of the best quality, the creameries must have milk free from germs and taints.

CALIFORNIA BUTTER SCORES.—The care and handling of milk is a subject by itself and I will leave it for others, but I think it is my duty to refer to the subject, as the outlook for the future depends largely on this. At present we cannot supply the demand of our southern market with local butter, but the time may come when we can do so and must then find other markets and come into competition with the finest grades of the world.

In 1896 Major Alvord scored thirteen samples of our local butter; one sample scored 95, three 92, two 91, and balance from 90 down to 80. What kind of success would we have competing with Mrs. Dr. Sherman, who received the gold medal with a score of 93½? She says the secret of her success was in the handling of the milk. The feed was alfalfa hay and alfalfa silage.

At the last State Fair the winning scores were 96½, 96½ and 96. At the same Fair J. A. Howie, an

expert butter maker at the Eureka creamery, Compton, and a former prize winner, only scored 93½. He lost four points on flavor and two and one-half on grain. I really feel that the fault was in the quality of milk delivered to the creamery and not in the manner of workmanship.

At the meeting of the National Creamery Butter Makers' Association, recently held at Lincoln, Neb., out of 673 sample tubs scored the winners received 98, 97½ and 96½. I mention these scores to impress upon the milk producers the necessity of taking all the care possible in handling the milk. If the patrons of the creameries took the same care of their milk that the city milk man does, I am sure the scores of our local butter could be raised several points. These facts should be taken into consideration and we must do all we can to increase the demand, which would make the outlook for the dairy still brighter.

AGAINST FALSE PRODUCTS.—In 1894 the Dairymen's Association of Southern California was organized, the principal object being to legislate against oleomargarine, which was being used freely under the supposition that it was butter, and was displacing our own butter to a great extent. The dairy associations accomplished the work laid out and oleomargarine was allowed to be sold only under certain conditions, and those conditions were so obnoxious that they drove it out of the market, and we have had the market to ourselves until the past few weeks, when it was found oleomargarine was being used in several restaurants and at least one grocery in Los Angeles. The State Dairy Bureau ordered their agent here to make an investigation and secure the necessary testimony. This was done, samples secured and analyzed and early this month warrants were issued and several arrests were made. In the first case brought into court the defendant pleaded guilty and was fined \$50, which he paid and was apparently glad to get out of it with as little notoriety as possible. He was keeping a first-class restaurant and could not afford to be advertised as using an imitation butter.

In the second case to come up the defendant was a partner in selling oleomargarine to the restaurants and when the case was called failed to appear. His bond was forfeited, a bench warrant was issued for him and he will be arrested if he ever returns. It is supposed he has gone to Seattle.

The third case is still in court, awaiting a decision of the judge.

THE OUTLOOK.—Before closing let me call your attention to a few reasons why the outlook for the dairy is very encouraging. First, our market is not fully supplied with local butter, and will not be for some time, as it is continually growing, and by using more care in handling the milk a better grade of butter can be made and the demand will be increased. Next, the scanty rainfall of the past few years has set the farmers to thinking and many have developed water, taking more pains in raising crops; put up silos, thereby securing more feed than formerly; weeded out numbers of poor cows and are now ready to do business on a better basis than ever before.

The formation of the Los Angeles Creamery Board of Trade allows the creameries to name the price of butter instead of allowing the buyers to do so, and is a great advantage.

The Dairy Association, while apparently not very active the past year or two, is very much alive and still watching the interests of the farmers, and is assisting the State Dairy Bureau in enforcing the law relating to oleomargarine, and ought to have the financial support of any person supplying milk for butter or cheese.

Prune Yield in Santa Clara Valley.

TO THE EDITOR:—In the issue of your paper for March 24 Mr. Edward Berwick of Monterey mentions the products of an orchard on the West Side, in this valley, and asked if there was anything else in Santa Clara county that could equal it or make a better showing. Among the members of the Santa Clara County Fruit Union we find one or two that exceed that mentioned by Mr. Berwick. We copy from our books the following returns from the ranch of R. W. Mantz of Berryessa. He informs us that there are not quite twenty-two acres and from that we received 93,115 pounds of dried prunes, besides besides apples. The prunes graded as follows:

Sizes.	Pounds.
30-40.....	24,888
40-50.....	47,492
50-60.....	10,111
60-70.....	6,512
70-80.....	2,024
80-90.....	1,095
90-100.....	.....
100-120.....	993
Total.....	93,115

There may be some that can make a better showing than this, but surely this is above the average.

W. P. CRAGIN,
Sec. Santa Clara County Fruit Union.
San Jose, April 21.

Agricultural Review.

ALAMEDA.

CUTTING HAY.—Oakland Enquirer, April 27: Hay cutting has begun. The crop is much better than it has been for several years. The failure of the crop for the past two years induced several in this county to sow clover instead of grain. There are about 100 acres of clover. It has shown up well and there will be a good crop. The first of this week tomatoes were set out. Nearly 1000 acres will be planted. The bulk of the crop has been contracted for by canners.

THE GRAIN BLIGHT.—Oakland, April 24: Henry Dusterberry, a pioneer farmer of Washington township, explained the cause of the grain blight which has recently appeared in the fields about Irvington, Centerville, Newark and Alvarado. He stated that an examination of the soil of the grain fields reveals a small, white worm, no thicker than a fine hair and all but invisible to the naked eye, which feasts upon the roots of the grain stalks. This has the result of sapping the life of the growing grain, and the young stalks immediately turn a sickly yellow or dirty white. "It is fourteen years," added Dusterberry, "since the same kind of an earth worm attacked the growing grain in our section of the county. It will be the cause of considerable losses to our farmers."

BUTTE.

ESTRAY LAW UNCONSTITUTIONAL.—Willows Journal, April 24: Judge Gray of Oroville has declared the new estray law unconstitutional, in that it seeks to deprive a person of his property without due process of law. The case was brought by G. W. Simpson of Butte county against Luella J. Myrie, in which Simpson sought to recover a number of cattle which defendant had taken up under the ostray law. The court decided in favor of plaintiff.

FRESNO.

PACKING COMPANY ORGANIZED.—Fresno Republican, April 26: Articles of incorporation of the Bowles Packing Company have been filed. The principal place of business is to be at Bowles' Switch, and the capital stock is \$10,000. The directors named are J. K. Kennedy, J. H. Madsen, G. N. Van Wormer, P. Koehler and P. W. Hastie.

SALE OF DRIED FRUIT.—Sanger Herald, April 28: A well known orchardist in this vicinity informs us that he has just closed a deal with a Fresno packing house for the sale of his fruit crop. He is to get 5½ cents for dried peaches, August delivery, and 6½ cents for Royal and 6½ cents for Moorpark apricots. Fruit must be delivered before August 31st. This will enable the orchardist to dispose of most of the Fosters and the Early Crawfords under the terms of his contract, besides some other early varieties of peaches.

CROP REPORT.—Selma Enterprise, April 26: Rain seldom comes at a more opportune time and seldom does more good than did that of Friday and Saturday. The precipitation was .54 inch and was invaluable. A big wheat crop is assured, pasturage and hay abundant and the best, and a heavy fruit crop. Fruit is developing so rapidly that already apricot, nectarine and peach trees are being propped, which means that much of the fruit will have to be thinned; nor should this thinning process be neglected, because, as is known to every grower, trees are every year ruined by being permitted to bear an overabundance of fruit.

HUMBOLDT.

CREAMERY PRICES.—Arcata Union, April 21: The creameries in this section paid for butter fat this month as follows: Harpst & Spring, 19½ cents; Arcata creameries, 20 cents; Silva, 20½ cents; Minor, 20½ cents; Lovorn, 19½ cents. In the Eel river valley the following prices were paid: Cold Springs, 19½ cents; Humboldt, fifteen days 22 cents, sixteen days 19 cents; Independent, 20 cents; Grizzly Bluff, sixteen days 21½ cents, fifteen days 17 cents;

Eel river, sixteen days 21 cents, fifteen days 18½ cents; Excelsior, sixteen days 21 cents, fifteen days 18 cents; Red Poll, sixteen days 21 cents, fifteen days 19 cents; Loleta, 19 cents; Ferndale, sixteen days 21 cents, fifteen days 18½ cents; Crown, sixteen days 21 cents, fifteen days 18½ cents; Andreason, eight days 22 cents, eight days 21 cents, fifteen days 18 cents; Capitol, 19½ cents; Abramson, sixteen days 18 cents, fifteen days 21 cents.

LOS ANGELES.

PROFITABLE HENS.—B. M. Blythe has eighteen White Leghorn hens and two roosters, and from Feb. 15, 1899, to Feb. 15, 1900, the hens laid 2914 eggs. The hens raised eighty-seven broilers. Feed cost \$12 for the year, and the eggs, at 15 cents per dozen, were worth \$36.42½; eighty-seven broilers, at 15 cents, make \$49.47½, and, deducting \$12 for feed, the eighteen hens paid a profit of \$37.47½.

MERCED.

CROP NOTES.—Merced Sun, April 27: Frost killed fully one-half the fruit at Hornitos and heavy winds have blown down some of the fruit trees. Most of the wild hay is cut and stored. The yield was better than for the last few years, though not heavy except in spots. Grain is growing fast, and the early sown is heading. Several varieties of garden seeds sent here by the Government have failed to sprout; others are doing well, particularly beets, which are ahead of early round turnips sown the same day in the same soil.

NAPA.

AGRICULTURAL DIRECTORS MEET.—Napa Register, Apr. 27: The directors of the Napa Agricultural Society—Messrs. G. W. Strohl, C. Welti, D. S. Kyser, W. F. Fisher, Geo. Berry, Arthur Brown and J. S. Taylor—met and organized by electing G. W. Strohl Pres., D. S. Kyser Vice-Pres., E. S. Bell Sec'y and Chas. Welti Treas. Messrs. Kyser, Welti, Brown and Bell were appointed on a committee to canvass the citizens of the town in order to ascertain what encouragement is offered for the giving of a fair.

SACRAMENTO.

LITTLE DAMAGE DONE.—Sacramento Record-Union, April 28: The north wind that had prevailed for the last three days ceased last evening. It does not appear that the wind did much damage in this vicinity. While some fruit was knocked off, the quantity is comparatively small—not more, perhaps, than was desirable, as the trees were too heavily loaded as a rule.

COWS FOR THE ASYLUM.—Acting under the authority of the State Commission in Lunacy, Joseph Steffens, a member of the Board of Managers of the Stockton Hospital, decided to purchase fifty cows from the Silva herd in this county, for use at the institution, to replace those afflicted with tuberculosis. State Veterinarian Blemer's examination of the herd showed every animal to be in a healthy condition and free from tuberculosis. The cows are all thoroughbred Jerseys.

SAN FRANCISCO.

BELGIAN HARE BREEDERS' ORGANIZE.—S. F. Call, April 24: A number of Belgian hare breeders met last night at Central Park and formed a club. The following committee was appointed to draft suitable by-laws and to select permanent headquarters: W. W. Corbett, J. L. Clarke, C. A. Muller, S. Budd Rosenberg and Geo. H. Bradshaw.

SAN JOAQUIN.

SHIPPING STRAW.—Stockton Mail, April 25: F. E. Ferrell & Co. to-day shipped the first consignment of an order of 100 tons of straw to Fort Wingate, New Mexico. The straw will be used for bedding horses and mules owned by the Government at that place. This is said to be the first time that this county straw has been in demand for points so far south and east, but the local dealers are confident that after the esthetic government mule once sleeps upon a bed of San Joaquin county straw, he will kick if any other kind is offered him, and better prices for straw are consequently likely to result.

SAN MATEO.

FRUIT INJURED.—Redwood, April 26: The violent north wind yesterday and the sharp frosts this morning have destroyed the peach and apricot crops of this season. Until yesterday the orchardists were confident of a heavy yield, but the wind of yesterday and the frosts of last night have played havoc with them. The ground is covered with apricots and peaches about the size of marbles. The frosts are causing the fruit to fall. Orchardists in and about Mountain View have suffered a similar misfortune. Never before in the history of the valley was the wind so terrific as yesterday.

SANTA CLARA.

PRUNES DROPPING.—San Jose Mercury, April 26: Wm. H. Lawrance, who owns a large prune orchard in Union, reports that nearly all of his prunes have dropped off and that he does not expect a ton of fruit from his entire orchard.

OPERATING IRRIGATION PLANTS.—Irrigating plants in the vicinity of Santa Clara are now in full operation day and night, and the many young orchards are being greatly benefited. The recent showers did much good. The grain was greatly benefited and very little damage was done to hay which was cut. The crops on the seed ranches never presented a better appearance, with the exception of the onion crop, which is said to be badly affected with a blight, and the prospects are that not over a quarter of a crop will be harvested.

FRUIT PROSPECTS.—Mercury, April 29: There is no material change in fruit prospects throughout that part of the valley surrounding Campbell, except that the crop of apricots will be very light, on account of many orchards being thinned too much by frost. While some orchardists report a medium crop of prunes, many more will only have half a crop. Our orchardists are all praying for the success of the Cured Fruit Association, and some are not only praying, but working hard for its success. It is reported that the Campbell Fruit Growers' Union has recently sold a whole trainload of dried prunes, leaving their stock on hand quite small.

SANTA CRUZ.

BERRY GROWERS' MEETING.—Watsonville Pajaronian, April 26: A meeting of berry growers was held Saturday at which preliminary arrangements were made for handling the coming crop. Bart Driscoll was chosen to represent the Pajaro Valley Berry Growers' Association in San Francisco.

SOLANO.

EARLY BEARER.—Vacaville Reporter, April 28: R. Long has a young walnut tree which is an early bearer. In March, 1899, he grafted an English walnut branch into a small California walnut tree a couple of feet in height and hardly an inch in thickness. The graft bore a single completed walnut last year. This year, while it has added little to its height, it is well filled with walnuts.

SUTTER.

TEN HOURS A DAY.—Yuba City Farmer, April 27: One of the most successful farmers whom we know in this community has for years made it a practice to limit the day's work on his farm to ten hours, and this includes the milking and doing of all chores as well as the work in the field. He has fine crops, contented hired men and time to enjoy himself socially and improve himself intellectually.

TEHAMA.

CLIPPING WOOL.—Red Bluff News: There has been so much talk about "shearing sheep by machines" at Douglas S. Cone's pens that a reporter accepted an invitation from Mr. Cone to drive over to the reservation, where his sheep were being relieved of their wool. The principle of the machines, as they are called, is similar to the clippers used upon horses, with the exception that instead of one clipper there are two long rows of them, run by a shaft fed from a portable gasoline engine of 10 H. P. They work very slick, cause the gain of about a pound more of wool per sheep, and are far more humane than shears. A revolving cable similar to that used by dentists and horse clippers operates the cutters in the hands of the shearers. The throwing over of a lever stops the machine at the convenience of the shearer. With shears an awkward cut upon the animal often follows awkward use, but the clipper travels smoothly over the skin and clips the wool free and clear of the body. A beginner will clip about twenty sheep, but as he becomes accustomed to the use of the machine he gains till he can turn off 80 to 100 per day, and at 6 cents per sheep this is very good wages. The profit in the use of machines comes in the gain of wool, the uniformity of the clips, and the freedom from serious wounds upon the animal. At present Mr. Cone has twenty men operating.

NEVADA.

ON THE RANGE.—"Nevada has the reputation of having splendid beef cattle," said John Sparks of Reno a few days ago to a Salt Lake Tribune reporter, "and when it is known in the feeding States that Nevada cattle are coming into market, the stock yards are always well patronized and good prices obtained. At present all the immediately salable stock in the State are contracted for, but it is a great breeding State, and there is always a large reserve of the rising bovine generation. We are taking great pains in

Nevada to breed a high grade of cattle for beef qualities. There are no dairy cattle to speak of in our section of the country. The total number of cattle in Nevada to-day must be about 700,000 head, and this year's exports will probably be about 150,000 head. Three years ago the shipments ran up to 350,000 head, but there were no special reasons for that large figure. Contrary to reports, buffaloes and cows have been crossed, and with success, although crossing the other way has not been successful. I have tried it myself and have seen it done in the Texas Panhandle. The cross makes a very fine quality of beef, a fine robe skin and a very good-looking head. But the cow products are no milkers."

OREGON.

PRUNE CROP DAMAGED.—Portland, April 23: Lato reports from the prune districts of Oregon and Washington indicate that the damage to the prune crop by the frosts of the past ten days will reach nearly half a million dollars. While in southern Oregon the peach and pear crops were damaged somewhat, the main damage in other districts is to the prune crop.

BOARD OF HORTICULTURE.—Oregon Agriculturist, April 15: The vacancy in the office of president of the Oregon State Board of Horticulture, caused by the resignation of H. B. Miller, has been filled by the appointment of E. L. Smith of Hood River to that office. Mr. Smith is pre-eminently a fruit grower and takes the deepest interest in horticultural problems.

WASHINGTON.

CROP PROSPECTS.—Seattle Post-Intelligencer, April 26: The weather lately has been most favorable for farming operations in the Skagit valley. Spring seeding and plowing are well advanced, and this week will probably finish everything up. The spring work this year is much in advance of what it was at this time last year. The acreage of oats will, it is said, even exceed that of last year, which was the heaviest in the history of the county. Indications at present point to a heavy yield. Pasturage is excellent, owing to the mild winter, and cattle are as a rule in good condition. Fruit trees have not suffered from the recent frosts and will bear bountifully. The crop of strawberries will also be large. From a dispatch from Colfax it is learned that heavy rains have fallen throughout the Palouse country during the past two days. Rains are not considered of any particular benefit to crops. The ground is at present saturated to a depth of from 8 to 10 feet. Farmers report that their spring work is nearly completed. Seeding is almost done in all parts of the county except in the northern part. Grain never looked better in the Palouse. About Endicott and Winona, to the west of Colfax, wheat is in many fields more than knee high, and is beginning to joint. Fruit trees of all kinds are in bloom and the prospect for fruit, both among the Snake river orchards and on the highlands, was never better.

The Best Food for Infants

Nature planned that infants should have only milk for at least the first year of life. But thin milk, skimmed milk, will not nourish. It's the milk that is rich in cream, or fat, that does the work. This is because fat is positively necessary for the growing body.

Scott's Emulsion

contains the best fat, in the form of Cod-Liver Oil, for all delicate children.

They thrive greatly under its use. Soon they weigh more, eat more, play better and look better. It's just the right addition to their regular food. The hypophosphites of lime and soda in it are necessary to the growth and formation of bone and teeth.

At all druggists; 50c. and \$1.00.
SCOTT & BOWNE, Chemists, New York.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish.

Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular.

THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

The Dinkey-Bird.

In an ocean, 'way out yonder
(As all sapient people know),
Is the land of Wender-Wender,
Whither children love to go;
It's their playing, romping, swinging,
That give great joy to me
While the Dinkey-Bird goes singing
In the amfalula tree.

There the gum-drops grew like cherries,
And taffy's thick as peas—
Caramels you can pick like berries
When, and where, and how you please;
Big red sugar-plums are clinging
To the cliff beside that sea
Where the Dinkey-Bird is singing
In the amfalula tree.

So, when children shout and scamper,
And make merry all the day,
Where there's naught to put a damper
To the ardor of their play;
When I hear their laughter ringing,
Then I'm sure as sure can be
That the Dinkey-Bird is singing
In the amfalula tree.

For the Dinkey-Bird's bravuras
And staccatos are so sweet—
His roudales, apoggiaturas,
And rebustos so complete,
That the youth of every nation—
Be they near or far away—
Have especial delectation
In that gladsome roundelay.

Their eyes grew bright and brighter,
Their lungs begin to crow,
Their hearts get light and lighter,
And their cheeks are all aglow;
For an echo cometh, bringing
The news to all and me
That the Dinkey-Bird is singing
In the amfalula tree.

I'm sure you'd like to go there
To see your feathered friend—
And so many goodies grow there
You would like to comprehend!
Speed, little dreams, your winging,
To that land across the sea
Where the Dinkey-Bird is singing
In the amfalula tree.

—Eugene Field.

The Wooing of Meriel Ray.

"I've always brought you up to expect that I would do something for you, Rupert, and I will—but I confess I am disappointed. As my heir you would have a right to aspire to almost any marriage * * but the daughter of a country rector, one of seven children, nobody in particular, no money, no connections—"

"She's the most beautiful creature you ever saw."

"Of course," said Sir Spenthorne Carnac, dryly. "That goes without saying."

"Wait till you see her, Uncle Spen."

"I'm beginning to be quite fired with curiosity. If she's all you say, my boy, I wonder what she saw in you!" The tall old man, with the iron gray hair and long mustache, shading a well-cut, expressive mouth, smiled as he looked down at his nephew. "If I were a woman I should prefer some one over five foot six."

"All women don't worship thews and sinews," said Rupert Carnac impatiently.

"Lucky for you they don't my boy. Well, you really think the beauty cares for you? You don't imagine that the fact of your being my heir has anything to do with it?"

Rupert smiled a fatuous smile, which made his uncle long to shake him.

"You think yourself worldwise, Uncle Spen, and all that, don't you know; but you're on the wrong tack this time. I told them nothing about my prospects, and if Meriel has accepted me I presume it's for myself."

"H'm—the daughter of a country parson, seven brothers and sisters, etc. * * However, I will see the girl for myself. And so that she should not be on her good behavior—rich uncle and all that, don't you know—I'll go down to Systed and stay at the inn. There's a trout stream and I'll be supposed to be attracted by the fishing. Nobody need find out who I really am and I can

easily make acquaintance with the parson."

* * *
"Certainly, sir, you can have the rooms, and the fishing is especially good just now."

"Well that just suits me. Can I have some dinner?"

"Yes, sir; certainly sir. Er—what name did you say?"

"Spens."

"Thank you, sir."

As the landlady left the room Sir Spenthorne Carnac walked up to the diamond paned windows of the little inn parlor and looked across the road to where stood a small white house, the abode, he knew from his nephew's description, of the rector. Presently down the dusty road came a girl dressed in white, a tall and finely proportioned figure, clad in plain serge, with a sailor hat. The way the girl carried her head impressed Sir Spenthorne.

"By Jove, I suppose that's one of Lord Lauder's daughters," he said to himself. "I know they live somewhere hereabout. Now, if Rupert had fancied a girl like that—"

The girl was coming up the garden path and Sir Spenthorne caught sight of great brown eyes, chestnut hair, and a complexion like a wild rose.

"Yes, Miss Meriel, dear!"

"Can you let us have some eggs?"

"Only a few, Miss Meriel. We've got a gentleman come here for the fishing and I'll be wanting them for him. He's a real gentleman."

Sir Spenthorne smiled in his long gray mustache at this description of himself.

"Who was that?" he asked of Mrs. Bartlett after the departure of the young lady.

"That's Miss Meriel Ray, the daughter, of the rector."

"A great favorite in the village, I suppose?"

"Miss Meriel, sir—we call her the Ray of sunshine, bless her!"

On the other side of the road there presently appeared the tall figure of a clergyman. Sir Spenthorne went across, and, taking off his hat, inquired if the rector could advise him as to the best sort of fly to use on the river, as he was a stranger in Systed.

The Rev. Thomas Ray, himself a devotee of the gentle sport, took in with a swift glance the tall upright figure, the deep blue eyes, and the well-cut, powerful face of his interlocutor.

"What a handsome fellow!" he thought, "even now"—for the age the stranger could not be less than fifty.

"I should be delighted to tell you anything in my power," he said aloud. And the two men walked amicably down the road together between the sweet June hedges.

This walk was the beginning of a quickly ripening friendship. Meriel showed the way to the best pools. Sir Spenthorne invented the most wonderful picnics and al fresco teas for the children. When he wasn't by the river he was at the rector's house, and perpetually he was in the company of Meriel. Sir Spenthorne had never married, because years and years ago a girl had jilted him, and yet his heart was as full of reverence for woman as a boy's. Never had he come across one who fulfilled his whole ideal of womanhood until he met Meriel. He hardly realized which way things were drifting—was not Meriel engaged to Rupert, and was not he, Sir Spenthorne, the rich, elderly uncle, who came to make all things smooth for them?

As he returned to his inn one evening, after a delightful expedition in the woods with Meriel and a half a dozen young brothers and sisters, he found a telegram waiting for him:

"Am coming down to-morrow—getting anxious. Rupert."

Sir Spenthorne felt his heart suddenly grow cold. Good heavens! What folly was this? Why should he mind his nephew coming down? he asked himself, impatiently—but in his heart of hearts Sir Spenthorne knew the reason why.

He put the telegram in his pocket and walked across the road to the rector's house. The small servant showed him in. "Mr. Spens" was quite a friend of the family.

Meriel was alone, filling a china bowl

with June roses. Her face was flushed, and there were traces of tears on her cheeks.

"What is it?" asked "Mr. Spens," taking her hand.

"Nothing."

"Nothing—and you are crying?"

"I'm a fool," cried Meriel, passionately. "It's nothing; there is a man who wants to marry me—father wishes it, and I've said 'yes,' and he coming down to-morrow; that's all."

"But," said "Mr. Spens," gently, "don't you like him?"

Meriel turned a scared face to him.

"I didn't mind him—at first," she said.

"Well?"

"Well—nothing." The girl turned to the window and looked out into the shadowy evening.

"Tell me," said "Mr. Spens," with a sudden thrill in his voice—"tell me all about it."

"There's nothing to tell. He was a nice little man, and he asked father, and father said if he died there would be nothing for us, and it would comfort him to know one of his daughters was provided for. And though father looks well and strong, it seem he has something wrong with his heart, and he might die at any time—and so I said yes."

"I see," said "Mr. Spens" quietly. "But why is it more tragic now than before?"

But Meriel wouldn't answer him, and kept her head obstinately turned away, and "Mr. Spens" rose.

"I see it's no use asking you to confide in me," he said at last. Then Meriel turned on him.

"O, go, go!" she cried. And Sir Spenthorne turning, left the room without another word.

"My God!" he said to himself as he walked across the road to the inn, "I believe she might have liked me, old fellow as I am."

* * *
"What an awful thing!"

"Yes, it's a desperate business. I have telegraphed to the young fellow she's engaged to."

"Have you told him it's smallpox?"

"Yes."

When the young man was admitted into the darkened room and caught sight of the swollen face and blurred features dimly seen in the uncertain light, he tried in vain to conceal his feelings.

"It's horrible, isn't it?" she asked, wistfully. "No one could love me now."

Rupert was silent from embarrassment.

"You know you are quite free, Rupert." Meriel raised herself on her elbow and looked into her lover's face. The change which illness had wrought in hers appalled him.

"You are free, Rupert," she repeated.

"No, no," said Rupert, weakly.

"Yes, yes," said Meriel, cheerfully. "Take your freedom, Rupert. You know you are thankful in your heart."

Rupert stood looking awkwardly down at her.

"Uncle Spen will be furious," he said at last. "He thinks the world and all of you."

"Uncle Spen!"

"Yes, my uncle Sir Spenthorne Carnac. You only know him as 'Mr. Spens.' The fact is, he heard of our engagement, and wanted to take stock of you without letting you guess who he really was. I'm afraid he'll pitch into me about this."

A slow smile broke over Meriel's face.

"I think I can make your peace with him," she said.

* * *
"Is it true, Meriel, is it true that all is at an end between you and Rupert? Tell me my darling, is there—is there a chance for me?"

Sir Spenthorne Carnac was kneeling beside Meriel's sofa, her thin, wasted hand in his. The girl looked up.

"You want to marry me, now my looks are all gone?"

"I love you—I want you—and I don't care about anything else!"

But a few months after, when, thanks to a clever German specialist, young Lady Carnac had lost all traces of her

illness, and Sir Spenthorne was inordinately proud of this beautiful wife, Rupert declared that he had been abominably treated, and that Lady Carnac was the most mercenary and deceitful of woman.

He Engaged the Boy.

Dr. McTavish of Edinburgh was something of a ventriloquist and it befell that he wanted a lad to assist in the surgery who must necessarily be of strong nerves. He received several applications, and when telling a lad what the duties were, in order to test his nerves, he would say, while pointing to a grinning skeleton standing upright in a corner:

"Part of your work would be to feed the skeleton there, and while you are here you may as well have a trial to do so." A few lads would consent to the trial, and received a basin of hot gruel and a spoon. While they were pouring a hot mass into the skull the doctor would throw his voice so as to make it appear to proceed from the jaws of the bony customer and gurgled out: "Gr-r-r-gr-huh! That's hot!" This was too much, and without exception the lads dropped the basin and bolted. The doctor began to despair of ever getting a suitable helpmate until a small boy came and was given the basin and spoon.

After the first spoonful the skeleton appeared to say: "Gr-r-r-r-uh-r-uh! That's hot!" Shoveling in the scalding gruel as fast as ever, the boy rapped the skull and impatiently retorted: "Well, just blow on't, ye old bony!"

The doctor sat down on his chair and fairly roared, but when the laugh was over he engaged the boy on the spot.—London Tit Bits.

Don't Answer Impertinent Questions.

Impertinent questions are to be met with firm and dignified politeness. Any question about another's personal affairs, about the price of one's clothing, the amount of one's earnings, the reasons one has for entirely private conduct, is impertinent. Would I answer such questions? Not at all. Usually, by a little tact, one can settle such questioners. If there is no other way, I counsel a plain but courteous sincerity—a simple refusal to answer. One may just say: "Pardon me, I prefer not to give any information whatever on this matter."—Margaret E. Sangster in April Ladies' Home Journal.

Coffee and Hospitality.

A cup of coffee with crisp crackers and cheese or thin bread and butter sandwiches is one of the easiest forms of refreshment that can be offered to a caller or party of friends, and it is surprising that it is not more often employed by hostesses who wish to display their hospitality. Having good coffee to start with, a good cup of this delicious beverage can be made with even the most primitive of utensils, as any old soldier will testify.

SIAMESE WOMEN intrust their children to the care of elephants, and it is said that the trust is never betrayed. The babies play about the huge feet of the elephants, who are ever careful not to hurt the little creatures. And if danger threatens the sagacious animal will curl the child gently up in his trunk and sling it up out of harm's way upon its own broad back.

DIBBS (facetiously)—That is a picture of my wife's first husband.

Dobbs—Great snakes! What a brainless looking idiot. But I didn't know your wife was married before she met you.

Dibbs—She wasn't. That is a picture of myself at the age of twenty.

THE rich young women of the future intend to know how to manage their own affairs. Miss Kitty Reed, Thomas B. Reed's daughter, and Miss Jessie Ashley, daughter of the Wabash Railroad president, were among the number who recently received diplomas in law at the New York University.

In Housecleaning Time.

The theory of cleaning and settling one room a day is all very fine; to have a room and everything in it thoroughly cleaned and renovated when one is through—even though it discommode the occupants two or three days—is any number of times better.

The small, stiff vegetable brushes that cost only five or ten cents are invaluable for cleaning the mouldings, corners and crevices of woodwork and furniture.

Use a small, stiff, flat paint brush for cleaning the corners of the window sash.

Be sparing of ammonia in washing windows, as it injures the paint.

Hot, sharp vinegar or a new half dollar will remove paint spatters, and turpentine will take off putty stains.

An excellent mixture for cleaning glass is made by filling a bottle (with glass stopple) half full of deodorized benzine, and adding calcined magnesias until it is as thick as cream. Apply with a soft cloth, then polish.

Printers' ink is the best polisher yet found for glass. Use a soft cloth for wiping, and polish with a newspaper.

Clean white woodwork with soft water and whiting. For hard wood, or any varnished finish, use tea or a weak borax water, and finish with kerosene or a mixture of one part olive oil and two parts vinegar. In either case use the least oil possible, and polish with a soft woolen cloth.

Freshen wall paper by rubbing it briskly and thoroughly with cotton flannel or flannelette, changing often for a fresh piece. If it still looks grimy, use the freshly cut side of a loaf of stale bread (rubbing always in one way either up or down or crosswise). Grease spots can sometimes be removed by placing blotting paper over the spot and holding a hot sadiron against the former.

Brighten nickel bathroom fixtures with whiting moistened with ammonia, and polish which chamois.

Clean copper faucets and the like with diluted oxalic acid, then wash well with soapsuds and polish.

Brass with lacquered finish must never be scoured, merely washed with hot suds and immediately polished.

Rotten stone made into a paste with kerosene is fine for cleaning brass. Wash off with hot suds and polish at once.

If marble is only ordinarily soiled, cover with a thick paste of common baking soda, lay a damp cloth over and let it remain several hours, then brush off and wash with hot suds. To remove paint, pour chloroform over the spots, cover with a damp cloth and let it remain until it evaporates. Repeat as many times as necessary.

Copperas is an unexcelled disinfectant for drain pipes. Clean with soda or potash, and flush them thoroughly. Put one pound of copperas in a quart of cold water, and when dissolved put a cupful in the pipe when done using it for the night.

Freshen the colors of carpets and rugs that have been thoroughly dusted by cleaning with tepid soft water to which borax—in the proportion of one heaping teaspoonful to every gallon of water—has been added. Naphtha or chloroform will remove all grease spots and many stains.

Clean matting with salt and water. If there are grease spots, cover with French chalk, sprinkle benzine over, cover with a damp cloth, and let it lie until the benzine evaporates. If the spot still shows, "try again."

Freshen upholstered furniture with chloroform or naphtha, after beating and dusting as thoroughly as possible.

Do your most thorough cleaning and renovating in the sleeping rooms, kitchen, pantry and cellar.

If the kitchen has old-style plaster and no wainscoting, remove the old plaster to a height of 30 inches above the baseboard, and make a wainscoting of plain or small-patterned linoleum, finishing the top with a narrow wood moulding.

Use table oilcloth instead of paper for covering the shelves in kitchen closets.

If moths or other insect pests are found, fumigate the rooms thoroughly

with sulphur, opening every closet door and bureau drawer; and use insect powder in every corner, crack and crevice of the room and furniture.

After thoroughly cleaning the cellar and everything in it, fumigate it with sulphur before whitewashing the walls; then air and dry it out on two or three sunny and windy days.—Laura Carpenter, in the Country Gentleman.

If Miss Helen Gould is spending \$2000 a month for chaplains in the Philippines, she is teaching us a lesson we should not be slow to learn. We have no right to allow our soldiers to lack the restraining influences of religion at a time when they need it as they seldom have in their lives before.

THE law of nature is that a certain quantity of work is necessary to produce a certain quality of good of any kind whatever. If you want knowledge, you must toil for it; if food, you must toil for it, and if pleasure, you must toil for it.—John Ruskin.

AN interesting test has just been made by a French woman. With a view to testing the sustaining powers of chocolate, she lived on that alone for sixty days and lost but fifteen pounds in the interval.

Hail, bounteous May, that dost inspire
Mirth and youth and warm desire!
Woods and groves are of thy dressing;
Hill and dale doth boast thy blessing.

—Milton.

BUT what are past or future joys?
The present is our own;
And he is wise who best employs
The passing hour alone.

—Heber.

DOMESTIC ECONOMY.

The Cooking of Fish.

That fish is almost invaluable as a food is well known; although its actual proportion of flesh-forming material is low compared with beef or other meats, it contains a large proportion of phosphorus, which is necessary for the nourishment of the brain, and even in this particular fish differ as to their nutritive value. The white varieties—such as cod, haddock, halibut, sole and flounder—contain but a small per cent of solid nutritive matter, and for this reason are usually served with butter sauce, states a writer in the Portland Transcript. Other fish, such as mackerel, salmon and herring, are richer in fat and contain more nutritive matter, but, because of their fat, are somewhat difficult to digest. Of the shell fish, whose nutritive value is on a par with the white varieties, oysters are most digestible, scallops, shrimps, lobsters and crabs following in the order named.

In selecting fish, it is well to remember that it can not be too fresh; then the flesh of a fresh fish is firm and elastic, leaving little or no depression if pressed with the fingers, and also that the eyes of fresh fish are bright, not glassy.

In cooking, it is best to boil or bake a large fish. When boiled, they should be served quite plain with potatoes steamed and peeled, and a buttered sauce flavored with a more tasty fish, such as lobster or oysters or herbs. Most fish admit of boiling; it is usual to prepare them for this process by washing them in strong vinegar; they should not be allowed to soak in it, however.

All large fish with the skins whole should be put in cold water, first carefully wrapped in a cloth, but the smaller varieties of fish in slices require more rapid cooking, and should be plunged into boiling water at once. By this way the cut surfaces are hardened and closed and the juices of the fish prevented from boiling out. No more water than will just cover the fish should be used, or the skin will crack and the juices escape. As fast as scum rises on the water it should be taken away, and after it has come to a boil a tablespoonful of salt added to each quart of water is advisable. The fish is said to be done when the flesh begins to leave the bone; but, if a fish has been cooked

steadily by simmering, instead of fast boiling, the skin may remain quite sound and yet the flesh be sufficiently cooked. The best method of learning whether it be entirely cooked is by pushing a wooden skewer through the thickest part; if it goes easily, it is done.

As soon as the fish is cooked, lift out and let it drain thoroughly; then untie the cloth and transfer the cooked fish to a heated dish. The water the fish is boiled in will make a sauce, or may be used as a stock for a fish soup.

For frying, fish requires the same preparation as for boiling, being afterwards dipped in butter or egg and bread crumbs. The pan should be half full of boiling fat and the fish let down on a wire strainer or basket previously heated.

For broiling, fish should be washed and carefully dried, rubbed over with a lemon and then floured. The bars of the gridiron should be hot and well buttered before the fish is placed on them.

Domestic Hints.

APPLE PUDDING.—An easily made pudding that has served an old housekeeper on many emergency occasions is prepared by making a mixture of one cupful of flour, one cupful of sugar, one cupful of milk, a half cupful of butter and three eggs, and adding to it three chopped apples and three-quarters of a cupful of chopped raisins. This should be baked in a moderate oven about half an hour. Serve with hard sauce.

COFFEE SPONGE.—Beat together a half cupful of sugar and the yolks of three eggs. Add to them slowly two cupfuls of hot milk. Cook this mixture in a double boiler until it thickens. Remove from the fire and add a half box of gelatine that has soaked for one hour in a cupful of strong coffee. Pour into a bowl, and when it begins to set fold in carefully one cup of cream that has been whipped stiff. Place on the ice and serve very cold.

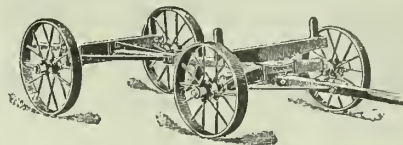
JELLIED PRUNES.—Cook a pound of prunes until quite tender, but not broken. Take about an ounce of gelatine, soak it in a little cold water until soft, pour into this all the liquor from the prunes while hot. This will dissolve the gelatine. Put the prunes into a bowl or cake-form and pour over them the jellied mixture. This, when cooled, makes an attractive dish. If a little stick cinnamon is cooked with the prunes it gives a fine flavor.

CARAMEL CUSTARD.—Melt and stir one-half cup sugar in an omelet pan; when light brown, add two tablespoons water, and stir it into one quart scalded milk. Add six eggs beaten slightly, one-half teaspoon salt and one teaspoon vanilla. Strain it into a buttered mould, placed in a pan of warm water, and bake thirty minutes or until firm. When cool, turn out and pour caramel sauce over it. For the sauce, melt another half cup sugar and when brown add half cup boiling water and simmer ten minutes.

MAYONNAISE.—To a well-beaten egg add half a cup of vinegar. Cook over hot water, stirring well, until it thickens, then take from fire. Mash fine the yolk of a hard-boiled egg, add a fourth teaspoon salt, a shaking of cayenne, a teaspoon sugar, a level teaspoon prepared mustard, two tablespoons melted butter (or olive oil if preferred), and the first mixture. Thin with half a cup of the gravy in which fish was cooked.

PIGEON PIE.—Select six pigeons, advises a writer in "What to Eat." Singe, draw and wash them. Place them in a saucepan, cover with boiling water, add one tablespoon of salt, two slices of onion, cover, and let simmer until tender. Then remove from liquor and let drain. Put into each pigeon one teaspoon butter, a sprinkle of salt, pepper and thyme, and a hard-boiled egg removed from shell. Place them in deep baking dish and strain over them the liquor in which they were cooked. To this add one cup of thin cream, one tablespoon of butter, two tablespoons of fine stale bread crumbs, one tablespoon of finely chopped parsley, one-fourth teaspoon thyme, salt to taste. Cover with crust of puff paste or a

delicate biscuit dough. Make several openings in top of pie, into which place the dainty feet of the pigeons, previously blanched in boiling water, after which the skin and claws can be readily removed. Bake in oven until crust is a delicate brown. Serve in dish in which it was baked, with a napkin folded around it. This pie is very delicious served cold.



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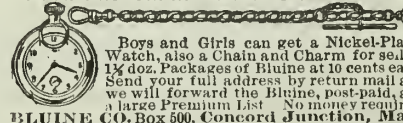
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, May 2, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	65 1/2 @ 66 1/4	67 1/4 @ 67 3/4
Thursday.....	66 @ 65 3/4	67 1/4 @ 67
Friday.....	65 1/2 @ 66 1/4	67 1/4 @ 67 3/4
Saturday.....	66 @ 65 3/4	67 1/4 @ 67
Sunday.....	65 1/2 @ 66 1/4	67 1/4 @ 67 3/4
Tuesday.....	* @ —	@ —

*Holiday.

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday.....	5s 9 1/4 d	5s 8 3/4 d
Thursday.....	5s 9 3/4 d	5s 8 3/4 d
Friday.....	5s 9 3/4 d	5s 8 3/4 d
Saturday.....	5s 9 3/4 d	5s 9 d
Monday.....	5s 9 1/4 d	5s 8 3/4 d
Tuesday.....	5s 9 1/4 d	5s 8 3/4 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	95 @ 94 1/4	1 04 @ 1 03 3/4
Friday.....	95 @ 95 1/4	1 04 @ 1 04 1/4
Saturday.....	94 1/2 @ 94 1/4	1 03 1/2 @ 1 04
Monday.....	93 @ 93 1/4	1 03 @ 1 03 1/4
Tuesday.....	94 @ —	1 03 @ 1 03 1/4
Wednesday.....	94 @ —	1 03 1/2 @ 1 03 3/4

WHEAT.

The market for this cereal has been slow and as a rule unfavorable to the selling interest most of the week under review. An occasional lot of select milling sold to fair advantage, compared with the generally low rates current on export grades. Shippers have been lately doing so little purchasing in this center that quotations for shipping wheat represent little more than the expressed views of exporters regarding values. In some parts of the coast, particularly in Washington, wheat is selling to local millers for relatively more than it will command in this center. Only ten cargoes of wheat cleared from this port last month, aggregating 33,000 tons and representing a valuation of \$650,000. This is lighter than for either March or February. For these two months the exports footed up 100,000 tons, valued at \$2,036,000. Freight market remains firm at about 40s per ton, with ships in light supply. The "visible" east of the Rockies showed a decrease the past week of 2,415,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 95 @ 93 1/4 c.
December, 1900, delivery, \$1.04 1/4 @ 1.03.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at 94 @ — c; December, 1900, \$1.03 1/2 @ 1.03 1/4.

California Milling.....	95 @ 1 02 1/2
Cal. No. 1 shipping, alongside.....	93 1/2 @ 95
Oregon Valley.....	95 @ 1 00
Walla Walla Blue Stem.....	95 @ 1 00
Walla Walla Club.....	85 @ 1 00
Off qualities wheat.....	82 1/4 @ 92 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	6s 3d @ 6s 5d	6s 4d @ 6s 1/4 d
Freight rates.....	25 @ — s	40 @ — s
Local market.....	\$1 06 1/4 @ 1 08 1/2	93 1/2 @ 97 1/2 c

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on April 1st and May 1st:

Tons—	April 1st.	May 1st.
Wheat.....	159,077	*152,103
Barley.....	46,749	†43,828
Oats.....	5,486	3,317
Corn.....	92	205

*Including 97,307 tons at Port Costa, 53,110 tons at Stockton.

†Including 18,696 tons at Port Costa, 14,417 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 6,974 tons for the month of April. A year ago there were 89,839 tons wheat in Call Board warehouses.

FLOUR.

Although the wheat market shows depression, there is less selling pressure than a few weeks ago, when wheat in this center was firmer. This is due to advanced cost of flour through local causes at some interior points contributing to this market. Flour values in this center, however, show no quotable improvement.

Superfine, lower grades.....	\$2 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90

Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

The market is showing a little firmer tone in consequence of crop prospects being poorer than they were prior to the recent north winds. The demand is far from active, however, either for shipment or on local account. Local millers have been lately running largely on Port Costa screenings, securing them at lower figures than the most ordinary grades of feed barley. A cargo of barley, 63,925 centals, valued at \$67,218, was dispatched this week for the United Kingdom.

Feed, No. 1 to choice.....	72 1/2 @ 75
Feed, fair to good.....	65 @ 70
Brewing, No. 1 to choice.....	85 @ 95
Chevalier, No. 1 to choice.....	@ —
Chevalier, No. 2.....	@ —

OATS.

In the matter of quotable rates there are no special changes to record, but the market presents a slightly better tone, mainly due to the recent tolerably heavy purchasing on Government account. Recent arrivals have not been heavy, nor are they likely to prove of large proportions in the near future. As for some time past, colored oats have been receiving the bulk of attention. They are more firmly held than recently, but are still cheaper than whites.

White Oats, fancy feed.....	1 22 1/2 @ 1 25
White, good to choice.....	1 12 1/2 @ 1 20
White, poor to fair.....	1 05 @ 1 10
Gray, common to choice.....	1 07 1/2 @ 1 15
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	92 1/2 @ 1 02 1/2
Red.....	95 @ 1 17 1/2

CORN.

Market for Yellow corn, both Large and Small, remains firm at previously quoted rates, with poor prospects of inclining materially in favor of buyers for some time to come. Large White, both domestic and Eastern, is being offered more freely than the demand for this variety warrants, and the market in consequence inclines against sellers.

Large White, good to choice.....	1 05 @ 1 07 1/2
Large Yellow.....	1 17 1/2 @ 1 20
Small Yellow.....	1 50 @ 1 60
Eastern, in bulk (carload lots).....	1 10 @ 1 12 1/2

RYE.

Stocks have been reduced to a moderate extent through some recent purchasing on export account. There has also been a little local inquiry. Market is firm at figures quoted.

Good to choice, new.....	97 1/2 @ 1 02 1/2
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BUCKWHEAT.

Same inactivity as previously noted, values remaining nominally unchanged.

Good to choice.....	2 00 @ 2 10
Silverskin.....	@ —

BEANS.

The market is quiet, but is no more favorable to buyers on account of the lack of activity. Dealers see no cause for uneasiness and are not crowding stocks to sale. Only a very moderate movement during the balance of the season will relieve the market of present holdings. Any changes in quotable rates in the near future are more apt to be to stiffer than to easier figures.

Pea, fair to good, 100 lbs.....	3 35 @ 3 50
Small White, good to choice.....	3 35 @ 3 50
Lady Washington.....	3 15 @ 3 25
Butter, small.....	3 75 @ 4 00
Butter, large.....	@ —
Pinks.....	2 70 @ 2 90
Bayos, good to choice.....	3 15 @ 3 35
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 25 @ 5 35
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	@ —
Garhanzos, large.....	2 50 @ 2 75
Garhanzos, small.....	2 00 @ 2 25

Recent advices by mail from New York give the following report of the bean market, prices quoted being per 60-lb. bushel:

So far as trade in domestic beans is concerned, there has not been the slightest improvement, and the extreme dullness has caused just a little yielding in price, notwithstanding the fact that receipts have been very light. Exporters have filled a few orders for Marrow beans with foreign stock at about \$1.70 in bond, and the only trade in State Marrow has been with jobbers, who have had no difficulty in securing such lots as they have wanted at \$2.15 @ 2.17 1/2 for choice quality, latter full high at the close. Medium have reached \$2.17 1/2 in a small way for fancy stock, but average best lots are offering generally at \$2.15. The supply of Pea is very small, but outlets are correspondingly small and receivers are accepting \$2.17 1/2 for choice. Only a few, unimportant orders for Red Kidney were received during the week and these were filled at \$2.07 1/2 @ 2.10 f. o. b.; business is so slack that there

is an easy feeling on all grades. White Kidney neglected and nominally lower. Yellow Eye is also very dull. Occasional small jobbing sales of Turtle Soup are reported at \$1.80 @ 1.85, but it would be impossible to move any quantity. Lima well sustained at \$3.55. Foreign Medium and Pea have had a fair distributing trade, and the announcement that the Government would want 1,250,000 pounds—about 5450 sacks—for shipment to Porto Rico within the next five weeks has added a little firmness to the market, and some of the recent sales were 2 1/2 @ 5c. a bushel higher than a week or two ago. Green and Scotch peas have continued dull and weak.

DRIED PEAS.

Trading in Dried Peas is of such small proportions at present that there is little test to values. Quotations for the time being are based mainly on jobbing prices.

Green Peas, California.....	2 20 @ 2 35
Niles Peas.....	2 00 @ 2 25

WOOL.

There is no business to record in the wool market in this center, and advices from the East report a very quiet state of affairs on the Atlantic side. Speculative operators do not care to take hold at the figures which it would be now necessary to pay to secure wools in noteworthy quantity. Manufacturers are holding off the market, evidently for the purpose of depressing values by so doing. Holders are not, however, trying to crowd stocks to sale. Quotations below noted fairly reflect growers' views.

	SPRING.	
Humboldt and Mendocino.....	20	@ 23
Northern, free.....	16	@ 18
Northern, defective.....	13	@ 16
Middle Counties, free.....	15	@ 17
Middle Counties, defective.....	13	@ 15
Southern Mountain, 12 mos.....	12	@ 14
Southern Mountain, free, 7 mos.....	12	@ 15
Southern Mountain, defective, 7 mos.....	10	@ 12
Nevada, as to condition.....	16	@ 18

HOPS.

Nothing of consequence doing in this line, nor is there likely to be any particular change in this regard during the remainder of the season. Offerings are small in this center and are mostly of ordinary qualities. The little inquiry which exists is mainly for a better grade of hops than is now obtainable from first hands. In quotable values, which are largely nominal, there are no changes to note.

Good to choice, 1899 crop.....	6 @ 9
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The following review of the hop trade, coming through by mail of recent date, is from a New York authority:

There is nothing that suggests any change in the general position of the hop market. Business has moved along slowly, but stocks seem to be under pretty good control, and the absence of any pressure to sell has helped to sustain a steady tone to values. Dealers have been picking up a few lots here, and they are apt to do more of this later on, as supplies in the interior are now so short. Brewers have not been inclined to make many new purchases, most of them having a considerable quantity due them on old contracts. For the past few days the weather has been warmer, and, if this should continue, there is strong probability that more business will be accomplished. The transactions reported of late have been chiefly within range of 8 @ 12 1/2 c., but really choice States, if here, would doubtless reach 13c., and some of the very high grade Pacifics are held at 13 @ 13 1/2 c. Exceedingly low grade '99 hops, common yearlings and old odds, are much neglected and of uncertain value. Some further purchases are reported in the country during the past week, mostly at 7 @ 10c.; remaining stocks are small and in few hands. On the Pacific coast hops have been passing out of first hands rapidly, and the highest estimate that we hear of at the present writing is 21,000 bales for California, Washington and Oregon.

HAY AND STRAW.

The hay market has been dragging along in much the same weary manner as previously noted in these columns, being devoid of encouraging features for the producing interest. Receipts lately have been slightly on the increase, while the demand showed no improvement. Quotations remained unchanged, but for other than choice to select wheat, which occasionally sold above values quoted, the market was weak at the range of prices herewith named. Some new oat hay arrived from Midway, Alameda county, and sold at \$6.50 per ton.

Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 00 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 0 @ 7 00
Stock.....	4 50 @ 5 50
Compressed.....	6 50 @ 9 50
Straw, 1/2 bale.....	30 @ 40

MILLSTUFFS.

Bran was not in heavy supply, but there was a sufficiency for the rather limited requirements, and market was not noteworthy for firmness, especially for other than strictly choice. Middlings were held about as last quoted, with offerings and demand both light. Shorts were in scanty supply, but prices remained as before. Market for Rolled Barley and Milled Corn was moderately firm at quotably unchanged values.

Bran, 1/2 ton.....	11 50 @ 12 5
Middlings.....	15 00 @ 18 00
Shorts, Oregon.....	13 00 @ 15 00
Barley, Rolled.....	16 00 @ 16 50
Cornmeal.....	24 50 @ 25 00
Cracked Corn.....	25 00 @ 26 00

SEEDS.

There are no noteworthy offerings of any variety and consequently little upon which to base values. Previous quotations are continued in absence of anything warranting making changes in the same. Mustard Seed promises to be scarce and high throughout the season soon to open. Wild Mustard is not here in quotable quantity, but if clean would sell to good advantage. Some make the error of taking Indian Turnip or Rape Seed for Mustard.

	Per ctt.
Mustard, Trieste.....	3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25

	Per lb.
Canary.....	3 1/4 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	8 1/2 @ 9 1/2

BAGS AND BAGGING.

The market for Grain Bags has developed no changes since last review, nor are any anticipated in the near future. In other bags there is very little doing, this being ordinarily an exceedingly quiet time in this line. Values throughout the list remain quotably the same as previously stated.

Calcutta Grain Bags, huyer June-July.....	6 1/4 @ —
Calcutta Grain Bags, spot.....	6 1/4 @ —
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ —
State Prison Bags, 1/2 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 2 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 2 1/4
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/4
Fruit Sacks, cotton.....	6 1/4 @ 7 1/4

HIDES, PELTS AND TALLOW.

Hide market is very much the same as last noted, both as regards quotable rates and general tone. Pelts have been ruling quiet, with market rather easy at the quotations current. Tallow was in moderate request at unchanged values.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10	9
Medium Steers, 48 to 56 lbs.....	9	8
Light Steers, under 48 lbs.....	9	8
Heavy Cow Hides, over 60 lbs.....	9	8
Light Cow Hides, under 50 lbs.....	9	8
Wet Salted Kip.....	9	8
Wet Salted Veal.....	9	8
Wet Salted Calf.....	10	9
Dry Hides.....	18	15
Dry Kip and Veal, 11 to 16 lbs.....	17	13
Dry Calf, under 4 lbs.....	20	16
Salted Horse Hides, large.....	2 50 @	—
Salted Horse Hides, medium.....	2 00 @	—
Salted Horse Hides, small.....	1 00 @	—
Dry Horse Hides, large.....	2 00 @	—
Dry Horse Hides, small.....	75 @	1 00
Dry Colts' Hides.....	50 @	75
Pelts, long wool, 3/4 skin.....	1 00 @	1 25
Pelts, medium, 3/4 skin.....	70 @	90
Pelts, short wool, 3/4 skin.....	35 @	60
Pelts, shealing, 3/4 skin.....	30 @	35
Deer Skins, best summer.....	27 1/2 @	30
Deer Skins, good medium.....	20 @	22 1/2
Deer Skins, thin winter.....	— @	10
Elk Hides.....	10 @	12
Tallow, good quality.....	5 @	5 1/2
Tallow, No. 2.....	4 1/2 @	4 3/4
Goat Skins, perfect.....	30 @	37 1/2
Goat Skins, damaged.....	10 @	20
Kid Skins.....	5 @	10

HONEY.

The market presents a generally strong tone, owing to the certainty of the crop in this State proving light. Supplies in this center are at present of very small volume, either of Comb or Extracted. Neither is demand what would be termed brisk at full current rates.

Extracted, White Liquid.....	7 1/2 @ 8
Extracted, Light Amber.....	7 @ 7 1/2
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	11 1/2 @ 12 1/2
Amber Comb.....	8 @ 10

BEESWAX.

The same healthy tone previously noted continues to be experienced and is likely to prevail throughout the season.

Good to choice, light, 1/2 lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Beef is without quotable improvement, market being easy at figures below noted. Mutton was in ample receipt and was offered at unchanged figures. Veal and Lamb sold at comparatively good prices, quotations being without appreciable change, although tendency on Lamb was downward. Hogs were not in heavy receipt and brought generally good figures for immediate use, but were too high for packers.

Beef, first quality, dressed, net lb.	6 @ 6 1/2
Beef, second quality.	6 @ —
Beef, third quality.	5 @ 5 1/2
Mutton—ewes, 6@70; wethers.	6 @ 7 1/2
Hogs, hard grain fed, medium.	5 1/2 @ 6 1/2
Hogs, small, fat.	5 1/2 @ 6 1/2
Hogs, large, hard.	5 1/2 @ 5 1/2
Hogs, acorn-fed.	— @ —
Hogs, feeders.	5 @ 5 1/2
Hogs, country dressed.	6 @ 6 1/2
Veal, small, lb.	7 @ 9
Veal, large, lb.	7 @ 8
Lamb, spring, lb.	8 @ 9

POULTRY.

About four carloads of Eastern live poultry arrived this week, but receipts of home product were not heavy, and the market was in the main firm for all desirable stock. Very small Broilers and very poor old fowls continued to meet with slow sale at low rates.

Turkeys, dressed, lb.	— @ —
Turkeys, live hens, lb.	13 @ 14
Turkeys, live gobblers, lb.	11 @ 12
Hens, California, lb. dozen.	4 00 @ 5 50
Roosters, old.	4 25 @ 4 50
Roosters, young (full-grown).	6 00 @ 7 50
Fryers.	4 50 @ 5 50
Broilers, large.	4 00 @ 4 50
Broilers, small.	2 00 @ 3 00
Ducks, old, lb. dozen.	4 50 @ 5 00
Ducks, young, lb. dozen.	6 00 @ 7 00
Geese, lb. pair.	1 50 @ 1 75
Goslings, lb. pair.	2 00 @ 2 50
Pigeons, old, lb. dozen.	1 75 @ 2 00
Pigeons, young.	1 75 @ 2 00

BUTTER.

Owing to an advance in asking figures, the market was less active than for some weeks preceding. Arrivals were not sufficiently heavy, however, to cause any great accumulation of stocks.

Creamery, extras, lb.	18 @ —
Creamery, firsts.	17 1/2 @ —
Creamery, seconds.	17 @ —
Dairy, select.	17 @ —
Dairy, seconds.	16 @ 16 1/2
Dairy, soft and weedy.	— @ —
Mixed store.	14 @ 15
Creamery in tubs.	18 @ 19
Pickled Roll.	— @ —
Firkin, California, choice to select.	18 @ 19
Firkin, common to fair.	16 @ 17

CHEESE.

Demand continues good for domestic product, both on local account and for shipment to near-by points. Market is firm at the quotations. For well seasoned cheese of high grade an advance on figures quoted would be obtainable, but there is not enough of this sort on market to admit of noteworthy operations.

California, fancy flat, new.	8 @ 8 1/2
California, good to choice.	7 1/2 @ 8
California, fair to good.	7 @ 7 1/2
California Cheddar.	— @ —
California, "Young Americas."	7 1/2 @ 9

EGGS.

While the market has been less favorable to buyers than for some weeks preceding, the demand has been less active, speculative purchasing on cold storage account being restricted by the stiffer prices asked. Some trade has also been diverted to Eastern, the latter now giving better values to bakers and other heavy consigners than domestic at the advanced rates. The market is in consequence not particularly firm at the new figures.

California, select, large, white and fresh.	17 @ —
California, select, irregular color & size.	15 1/2 @ 16 1/2
California, good to choice store.	15 @ 15 1/2
Eastern, as to section and grading.	15 @ 16
Eastern, cold storage.	— @ —

VEGETABLES.

Changes in this market have not been numerous or pronounced since last review. New Red Onions were in increased receipt and market was easier. Stocks of old Yellow are confined to a few Australian and are not quotable in a regular way. Asparagus and Peas continued to go to canners in liberal quantities. Rhubarb was plentiful and cheap.

Asparagus, lb. box.	1 00 @ 2 00
Beans, String, lb.	6 @ 9
Cabbage, choice garden, lb. 100.	40 @ —
Cauliflower, lb. dozen.	50 @ —
Cucumbers, bothouse, lb. doz.	50 @ 1 00
Egg Plant, lb.	8 @ 10
Garlic, lb.	— @ —
Onions, Red, Cal., good to choice.	1 25 @ 2 00
Onions, Oregon, lb. cental.	— @ —
Peas, Sweet, garden, lb.	2 1/2 @ 3
Peas, Green, sack.	90 @ 1 25
Peppers, Green Chile, lb.	6 @ 8
Peppers, Bell, lb.	— @ —
Rhubarb, lb. box.	25 @ 75
Squash, Summer, lb. box.	1 25 @ —
Tomatoes, Southern, lb. box.	1 25 @ 1 75
Tomatoes, Bay, lb. box.	— @ —

POTATOES.

Values for old potatoes were about as well maintained as previous week, with stocks and offerings of only moderate volume and mainly Burbank Seedlings from Oregon. New potatoes were in increased supply and market was slightly easier. Stocks of choice new, however, are not likely to be excessive for some weeks to come. New are now arriving in both boxes and sacks.

Burbanks, River, lb. cental.	50 @ 80
Burbanks, Bay counties, lb. cental.	50 @ 85
Burbanks, Humboldt.	— @ —
Burbanks, Oregon.	75 @ 1 05
River Reds.	75 @ 85
Early Rose.	— @ —
Garnet Chile.	— @ —
New Potatoes, lb. cental.	1 00 @ 1 50
Sweet, River, lb. cental.	— @ —
Sweet, Merced.	— @ —

The Fruit Market.

FRESH FRUITS.

Cherries now make the leading display in the line of early summer fruits, but arrivals are not particularly heavy for this time of year, the season being rather backward. Prices were at a wide range, owing to great difference in quality. Strictly choice brought fairly good figures. Gooseberries of the English variety put in appearance from Sacramento river section Monday, the first of the season, and sold at 15c per pound. A few Raspberries brought \$1.75 per drawer. Receipts of Strawberries were of fair volume and prices did not vary much from those of preceding week. Apples out of cold storage are held at tolerably stiff figures but are moving very slowly.

Apples, fancy, 4-tier box.	2 50 @ 3 00
Apples, good to choice, lb. 50-lb. box.	1 50 @ 2 25
Apples, common to fair, lb. 50-lb. box.	— @ —
Cherries, Black Tartarian, lb. box.	1 00 @ 1 25
Cherries, White and Red, lb. box.	35 @ 75
Strawberries, Longworth, lb. chest.	5 00 @ 9 00
Strawberries, Large, lb. chest.	4 00 @ 6 00

DRIED FRUITS.

In the market for cured and evaporated fruits, much the same quiet condition prevails as noted in previous review. Jobbers are as a rule complaining of dull business, which is natural for them when not crowded with orders. While the inquiry is far from what the most sanguine anticipated for the Spring months, there is a moderate movement, both outward and on local account, the trade being probably of as great volume as could be reasonably expected for this late date, with new crop fruit due in the near future, and no inducement for either large or small dealers, retailers or consumers, to stock up more than actually compelled to by immediate necessities. Quotable values are without appreciable change, but at present are in the main more in accord with asking prices or the views of holders than of figures likely to be realized where any undue selling pressure is exerted. Jobbers are slow to purchase, unless to make an immediate turn, even at temptingly low figures, being desirous of cleaning up their present holdings to make room for new fruit. There is thus a wide difference between the figures a jobber would ask on filling small orders from supplies he is now carrying and the figures he is willing to pay at this advanced date and take chances of effecting a clean-up. Peaches have been receiving perhaps more attention than any other variety, but at generally easy prices, concessions to buyers being the rule rather than the exception. Business in Prunes was not brisk, but at practically unchanged values and mainly in the larger sizes. Apples and Figs continue to drag and are weak at the quotations. Pears and Plums are ruling fairly steady, with only very moderate supplies of these remaining. Apricots are virtually out of stock. Buyers are talking 6 1/2 @ 7 1/2c for new Apricots in sacks, at producing points, as to locality and time of delivery, but there is no evidence of any noteworthy quantities having been secured on contracts from growers at these or any other prices. Values for new Apricots are as yet wholly undetermined, above figures simply representing the prices at which heavy buyers would like to contract with producers.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, lb.	10 1/2 @ 12
Apricots, Royal, fancy.	12 1/2 @ 13
Apricots, Moorpark.	13 @ 15
Apples, in 50-lb boxes, rings, pressed, fancy.	6 1/2 @ —
Apples, 50-lb boxes, rings, pressed, good to choice.	5 @ 6
Figs, White, fancy pressed.	5 1/2 @ 6
Peaches, unpeeled, good to choice.	5 @ 6
Peaches, unpeeled, fancy.	7 @ —
Peaches, peeled, in boxes.	12 1/2 @ 15
Pears, unpeeled Bartletts, halved, fancy.	9 @ 9 1/2
Pears, halved, unpeeled Bartletts.	6 1/2 @ 7 1/2
Pears, quartered, unpeeled Bartletts.	6 1/2 @ 7 1/2
Plums, Black, pitted.	6 1/2 @ 7 1/2
Plums, White and Red.	7 @ 8
Prunes, in sacks, 40-50s.	3 1/2 @ 4
40-50s.	4 @ —
50-60s.	3 1/2 @ 3 1/2

60-70s.	3 1/2 @ 3 1/2
70-80s.	3 @ 3 1/2
Prunes in boxes, 1/2c higher for 25-lb boxes, 1/2c higher for 50-lb boxes.	— @ —
4 sizes Santa Claras and equal.	— @ —
4 sizes San Joaquin and Northern.	— @ —
Prunes, Silver.	4 @ 6

COMMON SUN-DRIED.

Apples, sliced.	3 1/2 @ 4 1/2
Apples, quartered.	3 1/2 @ 4 1/2
Figs, Black.	— @ 3
Figs, White.	3 @ 3 1/2
Peaches, unpeeled.	5 @ 6

Advices by recent mail from New York furnish the following review of the dried fruit market in the East:

Prime evaporated apples have had more attention this week, exporters having some orders and considerable inquiry has come from the West; wood dried have sold up to 6c, and that figure is now as low as strictly prime could be obtained, though wire dried are offered at 5 1/2 @ 5 3/4c. Choice and fancy are held steadily, and grades under prime remain about the same. Sun dried apples are dull and weak. Chops about steady, with choice heavy packed scarce. Cores and skins dragging at 75 @ 90c., with some poor stock lower. Raspberries have advanced and held very firmly. Blackberries about cleaned up. Cherries firm. California fruit has met a fair outlet.

Apricots, Cal., Moorpark, 1899, lb.	14 @ 16
Apricots, Cal., Royal, 1899, lb.	12 1/2 @ 13 1/2
Peaches, Cal., 1899, peeled, lb.	16 @ 20
Peaches, Cal., 1899, unpeeled, in hxs, lb.	7 1/2 @ 9
Peaches, Cal., 1899, unpeeled, in hags, lb.	7 @ 9
Prunes, Cal., 1899, lb.	3 1/2 @ 7

RAISINS.

The Raisin market is exceedingly quiet, and prices for the time being are poorly defined. Former quotations are continued, there being no other figures officially set forth by either growers or dealers; but in the absence of any noteworthy business, and owing to the present unsettled condition of the market, no clear cut ideas of values can be given at this date.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, lb. box.	1 60 @ —
do do 2-crown, lb. box.	1 50 @ —
Valencia Layers, lb. 20-lb box.	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.	6 1/2 @ —
Loose Muscatel, seedless.	5 @ —
Pacifics.—2-crown loose Muscatel, 5 1/2c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c.	— @ —
Orientalis.—3-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.	— @ —

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.

Loose Valencias.—Fancy, lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.

Valencia Clusters.—Fancy, lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

There is no improvement to record in the Orange market, and poor prospects of any change for the better being realized during the balance of the season, the attention of consumers being more and more diverted as the summer advances to other and more seasonable fruit. Quotations are without marked change, but sales at top figures are the exception and are confined to most select qualities, which are in light stock, the bulk of supplies being of ordinary grades. Lemons are offering freely at the rates quoted, and sell only in a small jobbing way at extreme figures. Limes are obtainable at fully as easy prices as last quoted, with demand not very active.

Oranges—Navels, fancy lb. box.	2 25 @ 2 75
Navels, good to choice.	1 75 @ 2 25
Navels, common to fair.	1 00 @ 1 50
St. Michaels.	1 00 @ 2 00
Mediterranean Sweet.	1 00 @ 2 00
California Seedlings.	65 @ 1 75
Lemons—California, select, lb. box.	2 25 @ 2 50
California, good to choice.	1 50 @ 2 00
California, common to fair.	1 00 @ 1 25
Limes—Mexican, lb. box.	4 00 @ 4 50
California, small box.	50 @ 1 00

NUTS.

Not much doing in this department at present and no changes to note in quotable values. Stocks are light and will remain so until new crop comes upon the market. Prospects are favorable for Almonds meeting with a good market, owing to partial failure of the crop abroad. No Walnuts worth mentioning will be carried into the new season.

California Almonds, shelled.	14 @ 17
California Almonds, paper shell, lb.	10 @ 12
California Almonds, soft shell.	8 @ 9
California Almonds, hard shell.	4 @ 5
Walnuts, White, soft shell.	9 @ 10
Walnuts, White, California, standard.	7 @ 8
Chestnuts, California Italian.	8 @ 10
Peanuts, California, fair to prime.	5 @ 6
Peanuts, Eastern, hand-picked.	6 @ 6 1/2
Pine Nuts.	5 @ 6

WINE.

Although serious damage has been reported by frost to vineyards in various parts of the State, there is no evidence of quotable values for wine having materially improved in consequence. Were an active

demand to set in, however, stiffer prices than have been lately current would certainly have to be paid. Dealers are holding back, claiming that they are well stocked, at the same time they have no trouble in finding room for all they can secure at their figures, which for new dry wines are 14 @ 16c per gallon, San Francisco delivery, while growers in most instances are contending for 2 @ 4c per gallon more than dealers at present show a disposition to pay.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/2 sacks.	138,449	5,377,233
Wheat, centals.	141,152	5,789,914
Barley, centals.	54,876	1,691,501
Oats, centals.	18,440	706,249
Corn, centals.	1,910	121,046
Rye, centals.	2,170	95,232
Beans, sacks.	2,444	345,797
Potatoes, sacks.	15,965	1,001,173
Onions, sacks.	1,468	141,870
Hay, tons.	2,222	135,726
Wool, hales.	1,993	47,435
Hops, hales.	166	9,868

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/2 sacks.	87,164	3,652,308
Wheat, centals.	157,216	5,174,876
Barley, centals.	48,675	3,708,048
Oats, centals.	1,491	43,006
Corn, centals.	380	17,583
Beans, sacks.	587	21,232
Hay, hales.	7,640	125,152
Wool, pounds.	—	4,324,433
Hops, pounds.	5,501	1,005,235
Honey, cases.	45	3,483
Potatoes, packages.	805	68,230

California Dried Fruit at New York.

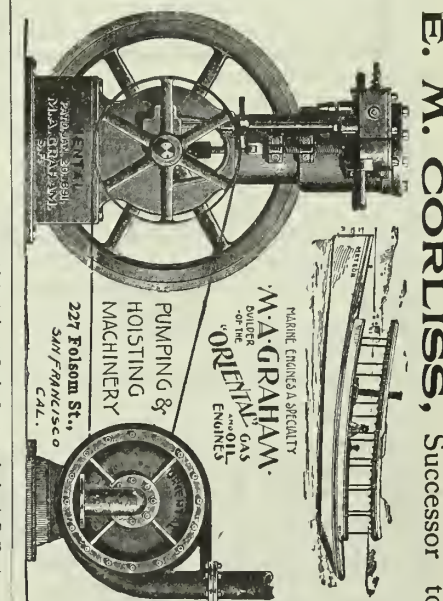
NEW YORK, May 2.—Evaporated apples, common, 4 1/2 @ 5c; prime wire tray, 5 1/2 @ 5 1/2c; choice, 7 @ 7 1/2c; fancy, 7 1/2 @ 8c.

California dried fruits quiet at nominally unchanged values.

Prunes, 3 1/2 @ 7c.

Apricots, Royal, 13 @ 15c; Moorpark, 15 @ 18c.

Peaches, unpeeled, 7 1/2 @ 9c; peeled, 18 @ 22c.



MOORE, FERGUSON & CO.

WOOL, GRAIN, FLOUR

General Commission Merchants,

310 CALIFORNIA ST., S. F.

Members of the San Francisco Produce Exchange.

Personal attention given to sales and liberal advances made on consignments at low rates of interest.

THE RAISIN INDUSTRY.

BY GUSTAV EISEN.

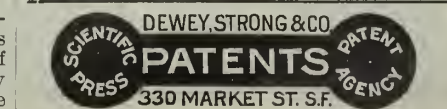
A Practical Treatise on Raisin Grapes,

Their History, Culture and Curing.

This is the Standard Work on the Raisin Industry in California. It has been approved by Prof. H. H. Gard, Prof. W. L. Wickson, Mr. Chas. A. Wetmore and a multitude of Practical Raisin Growers.

Sold only by THE DEWEY PUBLISHING CO., or its agents at the uniform price of \$3.00, postage pre paid. Orders should be addressed:

PACIFIC RURAL PRESS, 330 Market Street, San Francisco, Cal.



\$100 in Gold

If you saw a gold dollar lying in the dirt would you pick it up? If you could just as easily cure your horse of lameness, curb, splint, contracted cord, colic, distemper, etc., would you do it? A sure cure for thrush. We will pay the above reward for any case which



Tuttle's Elixir

will not cure. It does not change the hair and never makes a blemish. Excels in cases of lameness. Used and endorsed by Adams Ex. Co. St. John, N. B., Feb. 20, 1897.

Dr. S. A. Tuttle, Dear Sir:—We have used your Elixir for over five years for all horse ailments. We had a horse lame for over a year; two bottles cured him, and has not been lame since. Would recommend it to all.

Respectfully, M. F. JOSELYN & SON. Tuttle's Family Elixir is equally valuable in the household. Cures permanently, rheumatism, sprains, bruises, etc., and instantly relieves pain. Sample of either Elixir mailed for 6c. in stamps—merely to pay postage. Either Elixir for sale at all druggists for 50c. Get our 100-page book, Veterinary Experience. It is actually worth \$10 but we will mail it to you FREE.

DR. S. A. TUTTLE, Sole Proprietor, 85 Beverly St., Boston, Mass.

Beware of all so-called Elixirs, none genuine but Tuttle's.

THE VETERINARIAN.

Fatal Effects of Green Sorghum.

In a recent article on the value of sorghum for forage in the warmer parts of the State we added a warning on the feeding of second growth. The matter has just been reported upon in a preliminary way by R. S. Hiltner of the Nebraska Experiment Station and we haste to give the conclusions. Stockmen frequently suffer losses of cattle from pasturing them on sorghum. In a few herds in the State the losses last year were heavy, but the total number of fatalities was not alarmingly large. An unusually large acreage of cane was pastured last season, so that the loss sustained was relatively small, judging from reports received.

Just what the cause of the trouble is has never been ascertained. The prevailing opinion is that a virulently poisonous substance is sometimes developed by the growing plant. Many symptoms shown by the afflicted cattle tend to sustain such an opinion. The animals bloat but little. They apparently suffer terribly and die very suddenly. Postmortem examinations are reported to show lesions in the stomach, the membrane turning black.

A sample of cane that had produced fatal results was obtained and subjected to a careful chemical analysis. All efforts, however, to isolate and identify poisonous matter failed utterly. Although an effort was made to detect the presence of toxic substances in small quantities, it was assumed that refined delicate tests for traces of such poison were really unnecessary, from the nature of the case. A poison that will kill a full-grown animal in ten or fifteen minutes must necessarily be present in relatively large proportions. The analysis showed only a trace of potassium nitrate. Cultures made to develop toxic bacteria from the sample gave negative results. The leaves and stems of the material seemed to be free from parasitic growth. No poisonous matter, that might have been applied purposely to the leaves, was detected.

All the data collected indicates plainly that first growth sorghum may prove, at times, to be just as fatal as second growth. This controverts the prevailing popular impression, but facts at hand nevertheless corroborate such a view. It is in harmony with what is known of the chemistry of all plants. The chemical substances found in plant tissues are characteristic of the plant and are found in it in its various stages of growth.

The results of the investigation indicate, then, first, that in sorghum there is no inherent chemical poison, and second, that second growth cane, of itself, is no more injurious than first growth. The fact that so many fatalities occur proves that there is an element of dan-

ger in using sorghum for pasturage, and that considerable care should be taken in feeding it. Stockmen generally are agreed that hungry cattle should not be turned on to sorghum pasture, even for a short time.

A Case of Anthrax.

TO THE EDITOR:—Will you answer in the PACIFIC RURAL PRESS the following? I had two head of cattle die, within twenty-four hours after being taken sick. The animals seemed very stupid, or drowsy and sulky. On skinning, I found the flesh in fore shoulders bloodshot and nearly black. Will you kindly tell the trouble, if possible, and the remedy; also if disease is contagious.—W. P. MCCONNELL, Livingston.

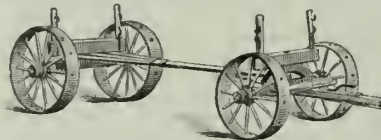
Dr. Creely informs us that the disease causing the death of your cattle is anthrax. It is a most deadly disease which admits of no cure, although there is a preventive treatment advertised in the PACIFIC RURAL PRESS from time to time by the Pasteur Vaccine Co., Examiner Building, San Francisco. There is not only no treatment which will cure the disease but the animal itself becomes a source of the most terrible contagion; it should not be buried, because the germs will arise for an indefinite period although the animal be deeply buried; the only proper treatment for an animal dying from anthrax is the complete burning of the body. Of course the greatest care has to be taken in handling the carcass. The disease is readily communicated to mankind.

Amateurs' Garden Book.

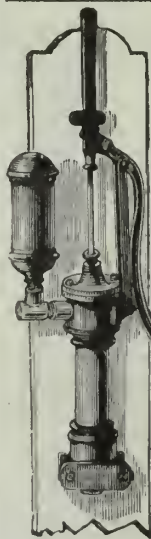
McMillan & Co. have just published another of their Garden Craft Series, entitled "Amateurs' Practical Garden Book," by C. E. Hunn and L. H. Bailey. It is a condensed handbook, encyclopaedia style, giving a few leading facts about each plant and its method of culture under Eastern conditions. The book will often furnish important facts and suggestions at a glance. The book is furnished from this office at \$1 per copy, postpaid.

Farm Wagon only \$21.95.

In order to introduce their Low Metal Wheels with Wide Tires, the Empire Manufacturing Company, Quincy, Ill., have placed upon the market a Farmer's Handy Wagon, that is only 25 inches high, fitted with 24 and 30-inch wheels with 4-inch tire, and sold for only \$21.95.



This wagon is made of the best material throughout, and really costs but a trifle more than a set of new wheels, and fully guaranteed for one year. Catalogue giving a full description will be mailed upon application by the Empire Manufacturing Co., Quincy, Ill., who also will furnish metal wheels at low prices made any size and width of tire to fit any axle.



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BEST LIFT AND FORCE IN THE MARKET.

No Pipes to Disconnect to Get at All Working Parts.

The "ALTA" is the most serviceable Deep Well Pump. Working parts taken up from any depth without disturbing pipe body.

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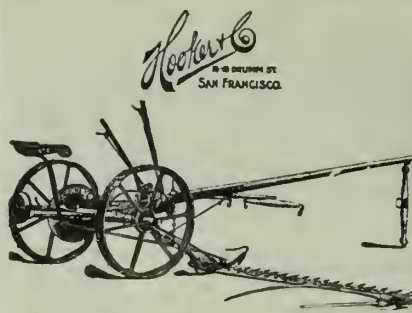
HALL'S MACHINE WORKS, 108 Main Street, San Francisco.



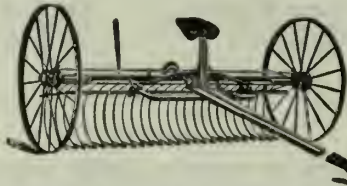
DON'T BE DISCOURAGED

Page 12 Wire 58-inch Fence will hold your stock. PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

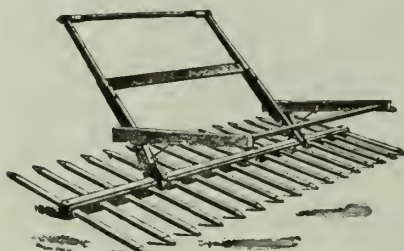
ELGIN Watches keep accurate time. Sold by jewelers in cases to suit. Prices reasonable.



AKRON BUCKEYE MOWER.



PACIFIC CHAMPION SELF DUMP RAKE.



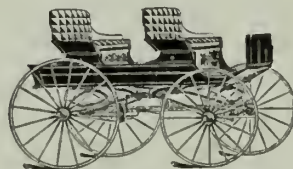
CHAMPION REVOLVING RAKE.



MANILA BINDING TWINE.



RUSHFORD FARM WAGONS.



MODEL 4 SPRING WAGON.



NO. 53. WORLD BEATER SURREY.



NO. 1. WORLD BEATER BUGGY.

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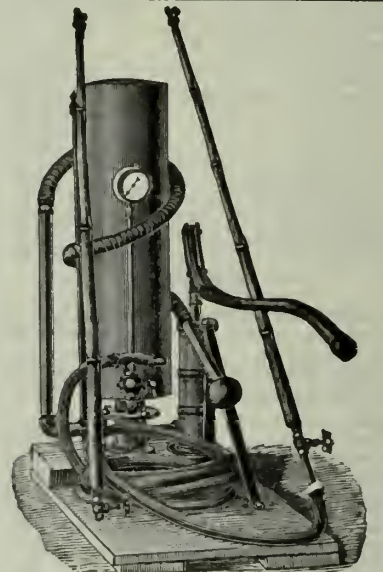
16 & 18 DRUMM ST., SAN FRANCISCO.

NO crop can grow without Potash. Every blade of Grass, every grain of Corn, all Fruits and Vegetables must have it. If enough is supplied you can count on a full crop—if too little, the growth will be "scrubby."



Send for our books telling all about composition of fertilizers best adapted for all crops. They cost you nothing.

GERMAN KALI WORKS, 93 Nassau St., New York. MEYER, WILSON & CO., San Francisco, Cal., are Sole Agents for the Pacific Coast.



THE BEAN SPRAY PUMP CO.'S

Specialty is a Spray Pump that will do the Best Work, the Most Work at the greatest Saving of Labor, That Will Not Rust, that is durable in all its parts, and prices as low as Good material and workmanship will admit of. Send for catalogue with prices, formulas of washes and suggestions on the methods of spraying.

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24 styles spraying outfits. Best and cheapest. For prices and full treatise on spraying all Fruit and Vegetable crops address WILLIAM STAHL, Quincy, Illinois.

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USED ON 150,000,000 YEARLY.

Not a refuse product of tobacco or dye factories. A sheep dip invented and made specially for sheep. You are asked to use it because it is the best. It occupies a supreme position in all countries. It is free from objections so common in others. It cures without injury. No smell.

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5-FOOT. WEIGHT, 300 LBS.

NEW STOCK. NEW PRICES.



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TREE WASH. OLIVE DIP.

"Greenbank" Powdered Caustic Soda and Pure Potash.

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COE'S ECZEMA CURE \$1 at druggists. 25c size of us. Coe Chem. Co., Cleveland, O.

"ALPHA-DE LAVAL" CREAM SEPARATORS.



The De Laval Cream Separators were first and have always been kept best. They have always led in improvements, which imitating machines must await the expiration of patents to use. The 20th CENTURY improvements give them still greater capacity and efficiency. They are immeasurably superior to any other system or method that can be employed in the separation of cream—saving \$5.- to \$10.- per cow per year over any setting system and \$3.- to \$5.- over any other centrifugal method. All sizes, styles and prices—\$50.- to \$800.-

Send for new "20TH CENTURY" catalogue.

THE DE LAVAL SEPARATOR CO.

RANDOLPH & CANAL STS., CHICAGO. 74 CORTLANDT STREET, NEW YORK.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING APRIL 17, 1900.

- 647,714.—SNAP HOOK—G. L. Baker, Waterford, Cal.
647,552.—FURNACE—C. H. Bennett, Los Angeles, Cal.
647,595.—POULTRY ROOST—C. Burrows, Phoenix, Ariz.
647,895.—URINAL—E. E. Burson, Los Angeles, Cal.
647,806.—NUT LOCK—G. W. Cleveland, Little Rock, Wash.
647,671.—DOOR CONTROLLER—M. A. De Lew, Sacramento, Cal.
647,651.—GAS ENGINE—W. R. Dow, Boulder Creek, Cal.
647,816.—MOLDING MACHINE—J. C. Dresel, Fresno, Cal.
647,745.—LAMP—Eldridge & Smith, Stockton, Cal.
647,828.—WEEDING MACHINE—F. S. Gunning, Dalles, Or.
647,658.—BUTTER CAN—J. A. Hall, S. F.
647,921.—SQUARE, LEVEL, ETC.—E. W. Hutchinson, S. F.
647,841.—INK WELL HOLDER—F. D. Jones, Los Angeles, Cal.
647,722.—TOBACCO PIPE—W. B. Kennell, Tacoma, Wash.
647,845.—FIRE ESCAPE—A. J. King, Orca, Wash.
647,504.—PIPE BOILER—W. MacFarlane, Seattle, Wash.
647,605.—REAMER—C. A. Mentry, Newhall, Cal.
647,678.—CHARGING LEACHING VATS—C. W. Merrill, Alameda, Cal.
647,682.—FILTER—R. C. Reed, S. F.
647,532.—FRUIT CORER—D. E. Sharp, Los Gatos, Cal.
647,685.—PIPE WRENCH—J. Stewart, Ft. Defiance, Ariz.
647,618.—GAS GENERATOR—A. C. Swain, S. F.
647,620.—RAILWAY CHAIR—E. F. Taylor, Azusa, Cal.
647,638.—WAVE MOTOR—G. N. Todd, Los Angeles, Cal.
647,772.—TOWEL MOISTENER—Townsend & Shelby, Watsonville, Cal.
647,711.—COMB FOUNDATION—H. Vogler, Newcastle, Cal.
32,540.—DESIGN—G. M. Light, Pomeroy, Wash.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

SPRING CLAMPS FOR BILLS OR ACCOUNTS.—A. W. Thierkoff, Redding, Cal. No. 646,510. Dated April 3, 1900. This device comprises an improved clamp for holding bills upon a cylinder drum described in a former patent. It consists of one or more clamps with a spiral spring and ball connection which forms an elastic movable fulcrum, so that either or both clamps can be lifted for the purpose of inserting or removing papers, and both clamps are held down by the action of the spiral spring.

GRINDING AND POLISHING WHEELS AND MOUNTINGS.—No. 647,063; April 10, 1900. James H. Adamson, West Melbourne, Victoria. This invention is designed as an improvement for cutting, grinding or polishing wheels and the mounting thereof, such as emery, tanite, corundum, or any grinding or cutting wheels of a material which has a tendency

to disintegrate when running at a high speed. The object of this invention is to provide mountings for such wheels by which they are reinforced and clamped together by the use of casings made of steel, iron or other material having greater strength and in so arranging such clamped devices that new surfaces of the wheel proper may be exposed as fast as it becomes worn.

SELF-CLEANING FILTERS.—No. 647,682; April 17, 1900. R. C. Reed, San Francisco, Cal. Two-thirds assigned to H. Zadig and M. Blum, of same place. This invention has for its object such a construction of filter that unfiltered water can be drawn directly through the apparatus or the water may be filtered and stored for use, and the flow of water through the filter may be reversed in conjunction with a direct cleansing flow over the surface to be cleaned. The filter includes a tubular filtering medium, an inclosing case therefor, a spiral passage formed about and removable with the filter surface and along which the water flows to automatically cleanse said surface, and means for admitting water to and discharging it from said passage.

Industrial Notes.

—One result of the Transvaal war is noticeable in the fact that U. S. uncut diamonds during February amounted to \$956 as against \$1,018,880 in February, '99.

—The value of the silver coins of the world has increased from \$0.59091 per ounce fine on Jan. 1, 1900, to \$0.60220 on March 31, making an increase of \$0.01129.

—Consul-General Patterson writes from Calcutta: "I am constantly receiving letters regarding the manufactures of the United States, inquiring how such manufactures can be produced, and requesting to be put in communication with our exporters. The imports into India last year amounted to about \$270,000,000, and this is the great distributing point. The National Association of Manufacturers of the United States is doing efficient and practical work in the way of extending the foreign work of the United States by establishing warehouses at Caracas, Venezuela, and Shanghai, China, for the display and sale of goods made by members of the association. I have no doubt that if such a warehouse were established in Calcutta, with agents authorized to make sales, a very large trade would result."

—The following table gives a comparison of prices in the United States and England:

Article and Quantity.	U. S. price.	Eng. price.
Lead, 100 lbs.	\$4 70	\$3 64
Litharge, lb.	8 3/4	4 3/4
Wire, smooth, 100 lbs.	3 05	2 50
Barb wire, galv., 100 lbs.	3 80	2 39
Wire nails, 100 lbs.	3 38	2 55
Iron ore, ton.	6 125	5 25
Tin plate, 100 lbs.	4 85	3 60
Sheet steel, 100 lbs.	2 70	2 07
Galvanized iron, 100 lbs.	3 78	3 23
Steel beams, 100 lbs.	2 30	1 80
Borax, refined, lb.	075	034
Lime, bbl.	90	62
Cream of tartar, crystals, lb.	22 1/2	159
Bleaching powder, lb.	2 3/4	015
Castor oil, lb.	12 1/4	066
Caustic soda, 100 lbs.	2 42	1 84
Cement, Portland, best, bbl.	2 55	1 11



In every town
and village
may be had,
the

Mica Axle Grease

that makes your
horses glad.

Made
by
Standard
Oil Co.

WHY THE BEST?

BECAUSE they are made on correct principles, therefore give the best results. The Menzel Hardware Co. of Santa Clara, Cal., state that "they have put up a large number of pumps of all kinds this season, but yours give us and our customers the best satisfaction." **BURTON PUMP AND MACHINE WORKS** have removed to 44-46 Main St., San Francisco, Cal., and will give full particulars and furnish estimates of pumps run with gasoline or steam engines. Horse powers or windmills—complete plants. Closing out stock of second-hand gasoline engines, 1 to 20 H. P.

The Machine that will Build a Butter Trade.

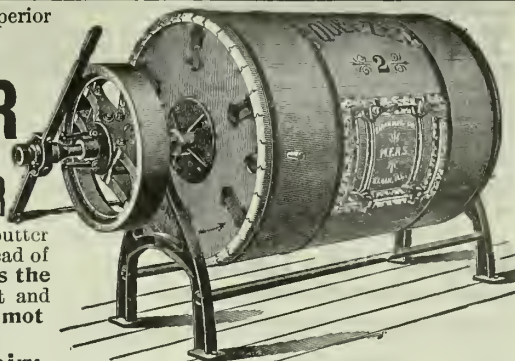
Because it will make a superior
quality of butter.

THE SQUEEZER COMBINED CHURN AND WORKER

squeezes the water and butter
milk out of the butter instead of
grinding it. It preserves the
grain, distributes the salt and
color evenly and prevents mot-
tles. It is

Made for the Dairy,
and is easily operated and readily cleaned. No dairy should be without it.
Will do Exhaustive Churning at any Temperature.

We are prepared to repair all cream separators and employ highly skilled men for this work.
Write for Catalogue No. 81. **ELGIN MANUFACTURING CO., ELGIN, ILL.**



Nitrate of Soda as a Fertilizer.

INSURE YOUR CROPS of WHEAT and OATS.

100 lbs. of **NITRATE OF SODA**
per acre applied early in the spring does it. Promotes stool-
ing, stimulates growth, increases yield. Of great value on all
crops, vegetables, grass, fruits, etc.

—FOR SALE BY—

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316 California Street, - - - San Francisco, Cal.

Write to them for pamphlets.



THE U. S. THE MOST DURABLE.

ROSENDALE, WIS., March 12, 1900.

Our No. 5 U. S. Separator we have run every milking since January 1893, and it now does as good work as ever. Repeated Babcock tests show it a close skimmer. There are four or five makes of hand separators in this vicinity and the U. S. proves the most durable of all.

If we have occasion to need another it will surely be a U. S.

GEO. C. HILL & SON.

Write for booklet entitled "Interesting Experiences" if you
are interested in cream separators.

VERMONT FARM MACHINE CO., Bellows Falls, Vt.



Deal with the Makers

When you buy a carriage, buggy or harness. Choose from the biggest stock and fullest assortment, and pay only the cost of making, with but one moderate profit added. Our plan of selling direct from the factory insures satisfaction—your money back if you're dissatisfied with your purchase—and enables you to **save the dealer's profit.**

Our complete illustrated catalogue, showing many styles of high grade vehicles, harness, robes, blankets and horse equipments, with detailed descriptions of each, mailed free. Write for it and learn how cheaply you can buy when the jobber's and dealer's profits are cut off.

THE COLUMBUS CARRIAGE AND HARNESS CO., Columbus, O.



No. 240 Single Strap
Buggy Harness. Price \$2.15.

"Pasteur" Black Leg Vaccine.

The original and genuine preventive vaccine remedy for Black Leg. Officially endorsed in all the cattle-raising States. Successfully used upon 1,500,000 head in the U. S. A. during the last four years. Write for official endorsements and testimonials from the largest and most prominent stock raisers of the country. "Single" treatment vaccine for ordinary stock; "Double" treatment vaccine for choice herds.

REGISTERED—"BLACKLEGINE"—TRADE MARK.

"Pasteur" single treatment Black Leg Vaccine READY FOR USE (no set of instruments required). Sold in packages:—No. 1 (10 head) \$1.50; No. 2 (20 head) \$2.50; No. 3 (50 head) \$6. Easily applied. No experience necessary.

PASTEUR VACCINE CO.,

213 Examiner Bldg., SAN FRANCISCO.

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183-185-187 FREMONT STREET,

Where, with Enlarged and Increased Facilities,

they are better than ever prepared to do

First-Class Machine Work

Promptly, and at Reasonable Prices, and will

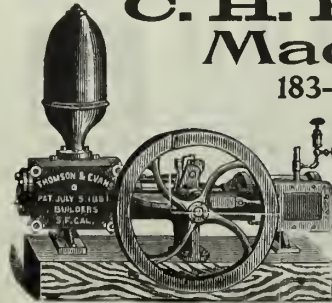
continue the manufacture of

Thomson & Evans Steam Pumps,

Deep Well Pumps, Power Pumps, Etc.,

Also Marine Engines, Ship and Steamboat Work,

Pipe Cutting, General Jobbing and Repairing.



\$50.00 RANGE FOR \$25.00

TO INTRODUCE OUR

TRIUMPH STEEL RANGE into every section of the United States,

we will for a short time deliver at your depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21 1/4 inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. **WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo.** Will ship C. O. D. with privilege of examination.



BUG BANE

TREE WASH!

STEAD'S "BUG BANE" is the best and cheapest wash known for either citrus or deciduous trees. Contains no poisonous chemicals. Is a fertilizer and tree tonic combined. Never clogs your pump or closes up the pores of a tree. **EASY TO HANDLE. Always effective.** In use for more than ten years by leading fruit men, some of whom use upwards of 20 tons per year. Their testimonials together with prices and full directions upon application.

Manufactured only by
G. D. STEAD CO. SAN DIEGO

Forestry Notes.

The exhibit of the Division of Forestry for the Paris Exposition is now complete and on the way to Paris. It will be one of the most novel of the Government exhibits and will be wholly distinct from the commercial features of lumbering to be shown in another department.

The display will be in the form of a hall or pagoda, the walls of which consist of large transparencies illustrating American forest conditions. These walls will be double and illuminated by interior electric lights. The pictures range in size from 3 by 5 feet to 4 by 6 feet. There will be two transparencies 6 by 10 feet, portraying groves of red fir and California big trees, two of the most impressive American trees.

A point will be made of the relation of forestry to agriculture, and such subjects as protective forests, the use of trees in preserving water supply, the management of woodlands, etc., are fully illustrated. The extent of the timber resources of the United States will be shown by pictures from all important lumber regions. The distribution of forests will be shown by maps. Twenty of the most important American woods will be represented by sections of trees.

A PACIFIC COAST TREE.—The western hemlock is to be the subject of a special investigation this summer by the Division of Forestry and a party of experts will spend several months in the Puget sound region making observations and measurements of that species of hemlock.

Although one of the largest and most widely distributed trees in the Pacific Northwest, it suffers from the prejudice against the eastern hemlock, a closely allied, but much inferior species, and for this reason has almost no commercial value. It grows at its best on the cool damp slopes of the Washington and Oregon mountains, where it is frequently 200 feet high and 10 feet in diameter, or even larger in favorable situations. It occasionally forms a dense, pure forest, but is more often mixed with red fir, the most important timber tree of the Northwest, and is usually left standing by the lumbermen because there is no sale for the lumber.

The wood of the western hemlock is less apt to be shaly, is stronger, more durable, and more easily worked than that of the eastern species. The bark is said to contain much more tannin.

By the present method of lumbering, immense quantities of hemlock are destroyed annually, for it is left to be burned by the fires which frequently follow the removal of the fir. It is believed that if this hemlock can be given its true value before the public, logging methods may be modified, and even if the market develops slowly, there will be a greater effort to prevent waste.

An important feature of this investigation will be to ascertain the rate of growth and the time required to produce a merchantable stand. The western hemlock possesses remarkable powers of reproduction and may be counted on to reforest logged off areas.

AN ACRE OF TIMBER.—A single acre of Washington timber, recently measured by the Division of Forestry, contained 218,690 feet B. M. of red fir, 11,000 feet of hemlock, and 6000 feet of cedar, making a total stand of 236,690 feet. The smallest fir on the acre was 3 feet in diameter and the largest 8 feet. The height of the forest approximated 300 feet. The hemlock was scaled down to 20 inches in diameter

and had it been scaled to 12 or 14 inches, as customary in the East, the stand would have been several thousand feet greater. This acre was measured near Wilkeson, Washington, about 30 miles from Tacoma.

The average stand per acre for 131 acres measured by the same party near Buckley, in the same county, was 74,402 feet of red fir, 30,105 feet of hemlock, 5000 feet of cedar, 2175 feet of spruce, and 593 feet of white fir; a total stand of 112,276 feet. In these measurements no trees less than 2 feet in diameter were scaled. No allowance, however, was made in the above calculation for cull. The 131 acres were taken in various parts of a township and represent with fair accuracy the stand throughout that township. The significance of these figures is apparent when it is remembered that 10,000 feet per acre is considered a heavy stand in all lumber regions east of the Mississippi.

Reliable Pumps.

In buying a pump or any other machine subjected to such constant use and frequent abuse it behooves one to look well to quality rather than first cost. The "Banner" pump, manufactured by Hall's Machine Works, 108 Main street, San Francisco, has stood the test for many years on hundreds of farms all over the Pacific States. As a cheap lift and force pump for shallow wells it has no superior and few equals. Its wearing parts are so accessible and easily disconnected that very little time or trouble is required for repairs. The material used in its construction is the best, and the work is done upon honor. Deep well pumps of several kinds are manufactured by these works upon the same general principles. Those requiring pumps for farm purposes can do no better than to send for circulars and general information to Robert Hall at the above address.

What Our Advertisers Often Say.

PACIFIC RURAL PRESS:—The result of my advertisement in your paper has been remarkable, so much so that I am unable to promptly respond to the demand at present, but trust your readers will be patient until a new lot can be prepared.

All requests will be responded to in the order in which they are received, and as promptly as circumstances will permit.

Will you please advise me what charge you would make for a notice in which I might explain the situation to those who may have to wait? Yours truly,

Geo. H. Croley.

San Francisco, Cal., April 28, 1900.

New York, June 26, 1893.
Dr. S. A. Tuttle, Dear Sir:—Please find enclosed a check, for which please send me one dozen bottles of your Elixir. I have used all of the other order. Please send as soon as possible.

Yours respectfully,

FRED MCCARTHY,

1019 East 162d Street, New York City.

NEW MODEL INCUBATORS.

Up to date in every way. Equipped with nursery under egg trays, and self-regulating device. Poultry supplies. Thoroughbred fowls.

POULTRY GUIDE FREE.

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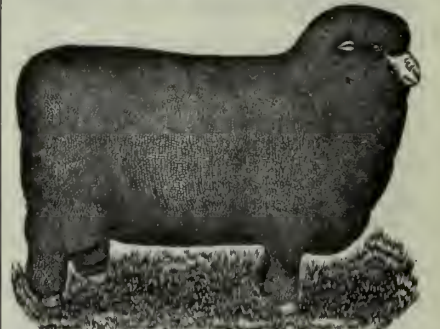


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The Grange and Its Destiny.

By BRO. E. C. SHOEMAKER, W. S. of the California State Grange, at the joint picnic of Tulare and Selma Granges.

MEMBERS AND FRIENDS OF SELMA GRANGE: In response to this great, grand and noble welcome I must say on behalf of Tulare Grange that we are very glad to meet with you on this beautiful day, in this beautiful grove, upon the banks of your beautiful river, beneath this cluster of gigantic old oaks. I am very glad to feel that I am more than ever interested in the great work which the Grange has projected. We are glad to be here with the active, working men and women, to whose zeal, enthusiasm, skill and devotion is due the success of this great fraternal and social order, as well as the greater importance it will assume in the future. I am glad to recognize in my position, as an officer of California State Grange, to-day the splendid work that has been so well begun and so faithfully carried forward by the sturdy Patrons and Matrons all over this broad land. The whole atmosphere has become redolent with the principles of the Grange—the valleys and even the hillsides are shouting their praises and resound with its fame.

We have an order which is without a rival. At present the Grange is the only farmers' organization that has a State and national head. I believe from what I see here to-day that this great valley should have many Grange organizations. This Order deserves at our hands all honor and gratitude for what it has done towards enabling the farmer to beautify his home and enliven his fireside. It is the products of the farm that have caused these United States to be interwoven with a mighty network of steel railways, touching every town and hamlet. It is the product of the farm that keeps our great ocean steamers plowing their international trade. It is growing, harvesting and marketing of the farm products, giving direct employment to millions of our people, that must first open the pathway for every mechanical or mercantile enterprise, and as the little springs and streams are the sources of mighty rivers, so is the farm the origin and true source of the wealth and prosperity of the world. Nearly every step in the advancement of the American farmer finds the possibility of its origin springing from the Grange. Let us work together and make ourselves strong in our own community, for the day is not far distant when the farmer's calling will stand among the highest and most profitable in the land.

The Grange is a primary school in which is taught the importance of agricultural instruction. The opportunity is grand; the responsibility great, the possibilities unlimited, and reward of personal benefit and consciousness of doing one's duty is ample compensation for all of the time and effort that is spent in the work.

San Jose Grange.

At the last regular meeting of San Jose Grange, as reported in the Mercury, it was generally agreed that the prunes will be a light crop, perhaps about the same as last year, except on the eastern side of the valley and also on the western foothills.

Prof. Childs stated that on the Almaden road apricots and peaches promise fairly well while prunes are a light crop. A. R. Woodhams said that he had been over a considerable portion of the valley and found that the prune crop would be light and peaches and apricots especially light in the southern part of the county along the Monterey road. D. Coates reported from Campbell that the prune crop there would probably be somewhat lighter than last year.

L. Lee said that frost had done much damage on the Monterey road. D. H. Bryant reported that the east side

crop will be much better than last year, especially prunes and apricots.

An able paper by Mr. Bryant upon the subject "Education and Agriculture" was read by the secretary.

The following Educational Committee was appointed: E. E. Newell, Miss Lorola Woodhams, Volney Rattan, Miss Ella Sanders and Mrs. Worthen.

On Saturday, May 12th, the Grange will hold a picnic at Blackberry Farm. E. E. Newell, C. W. Childs, V. Rattan, Ella Saunders, Miss Woodhams and Mrs. Hurlbert were appointed a picnic committee. A good musical and literary programme will be presented.

At the meeting of the Grange next Saturday twelve new candidates will be initiated.

Co-operative Business Enterprises.

NUMBER II.

There are many Grange stores in this country that have the advantage of shrewd financial management which are doing a thriving business and delivering goods to members of the Order at a less price than they could be secured otherwise, but the number is very small compared with that of such establishments which have started and failed. The ability to successfully manage a business of this kind will generally command such a price as to be beyond the limit warranted by the volume of trade, and the managers of successful establishments of this nature are entitled to credit as financiers. We believe adherence to the same business principles that have insured success in this matter in the past will be sufficient guarantee of success in the future.

There is a field for effort in the purchase of supplies of business firms where a previous arrangement has been made by a State Grange for reduced rates to members of the Order upon presentation of certain specified credentials. This is the most practical form of business co-operation adapted to the Grange, and the form generally adopted. The clubbing of orders by the members of a Grange for feed, farm implements, fertilizers or groceries, thus making available wholesale prices, car rates of freight and the usual discount for cash with orders, is not utilized as generally as its advantages warrant. An honest and capable person should be selected to do the business with a reputable firm, and then there is nothing for members to do but pay the money and take the goods on arrival. The practice of this method needs to have every safeguard adopted against dishonest dealers and inferior quality of goods.

The most successful of all co-operative efforts in the purchase of supplies has been in the matter of fire and life insurance. The reports of State insurance commissioners show that in some States less than 50% of the amount paid in premiums to stock companies for fire insurance is paid out for losses, more than 50% going for salaries, office rents and profits. We have in mind one State where a Grange mutual fire insurance company has been in operation more than ten years, has risks amounting to more than five million dollars upon property owned by members of the Grange, and has furnished safe insurance for this period at less than one-half the cost of same insurance in stock companies during same period. Many States have mutual fire insurance companies under the management of the Grange doing an immense business, and saving vast sums of money to the insured. The same principle applies to life insurance, and a like saving can be made if mutual companies are conducted upon the fraternal plan by managers of integrity and business ability. These suggestions are sufficient to stimulate thought along this line, and may lead to a solution of the question of what can be done in various localities in this direction.

J. S. TAYLOR,
Lect. Cal. State Grange.
Napa, Cal., April 20, 1900.

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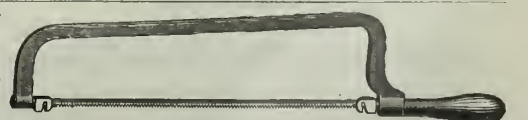
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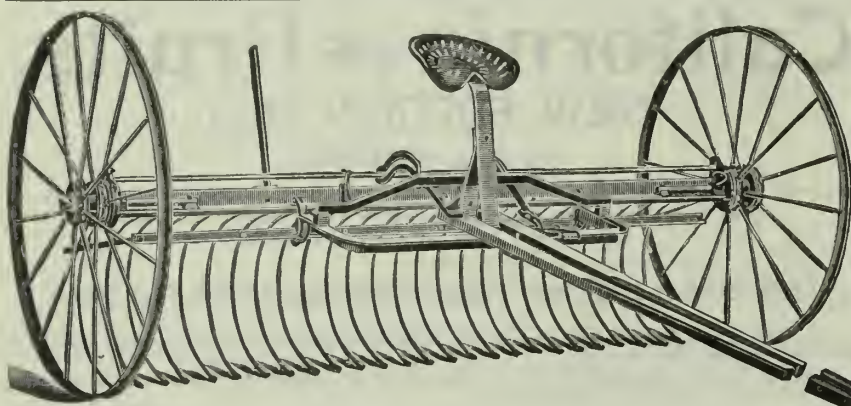


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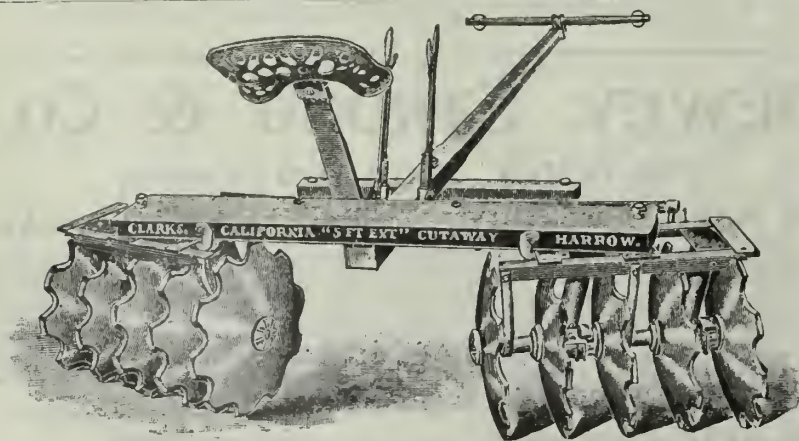
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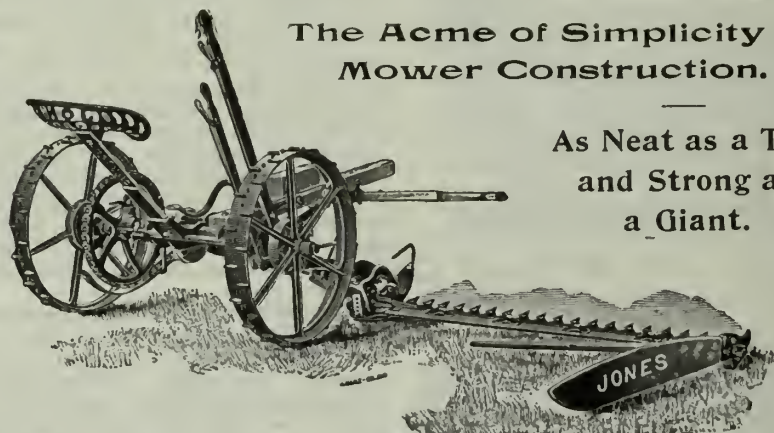
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 19.

SAN FRANCISCO, SATURDAY, MAY 12, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Resistant Vines and How They Grow.

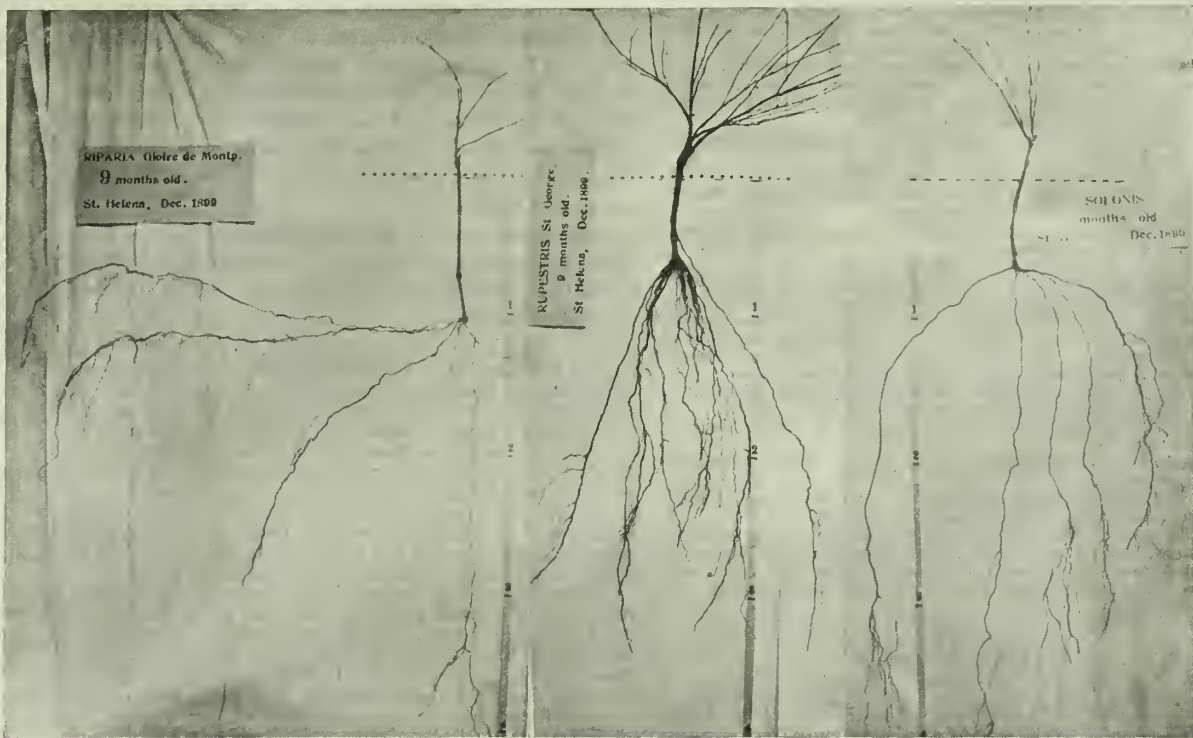
It is too late to do anything with resistant vines this year, except to think about them and watch for opportunities to learn about them from testimony and observation, so that the next planting season may not come before decision has been reached and the planter is rushed about between uncertainties about what to plant and where to get it. It is just in time to take up the inquiry side of the problem actively, and we are disposed to stimulate such inquiry. It seems to be demonstrated that wherever the phylloxera has already established itself time and money which are expended in planting susceptible roots are wasted. In places to which the insect has not yet attained the planter has, of course, some chance in the gamble as to whether or not it will get there before the vines put more money in his pocket than they cost. Every reader will have to figure that out for himself, because it depends largely upon local conditions.

What is of general interest as well as of local moment are the characteristics of resistant vines and how they grow, and these are matters which planters should discuss and seek for opportunities to make observations all summer. The various vine growing localities north, south and east of San Francisco bay all afford chances to study the resistant vines, because in all these places there are individual experimenters. The same is true of many vine districts distant from the bay region. It is not likely that there will be wide agreement as to which is the best resistant vine, because there will be various best kinds, each according to conditions which prevail locally. And yet there will be agreement for certain roots under similar conditions in widely separated regions. These are all matters to be observed and inquired into.

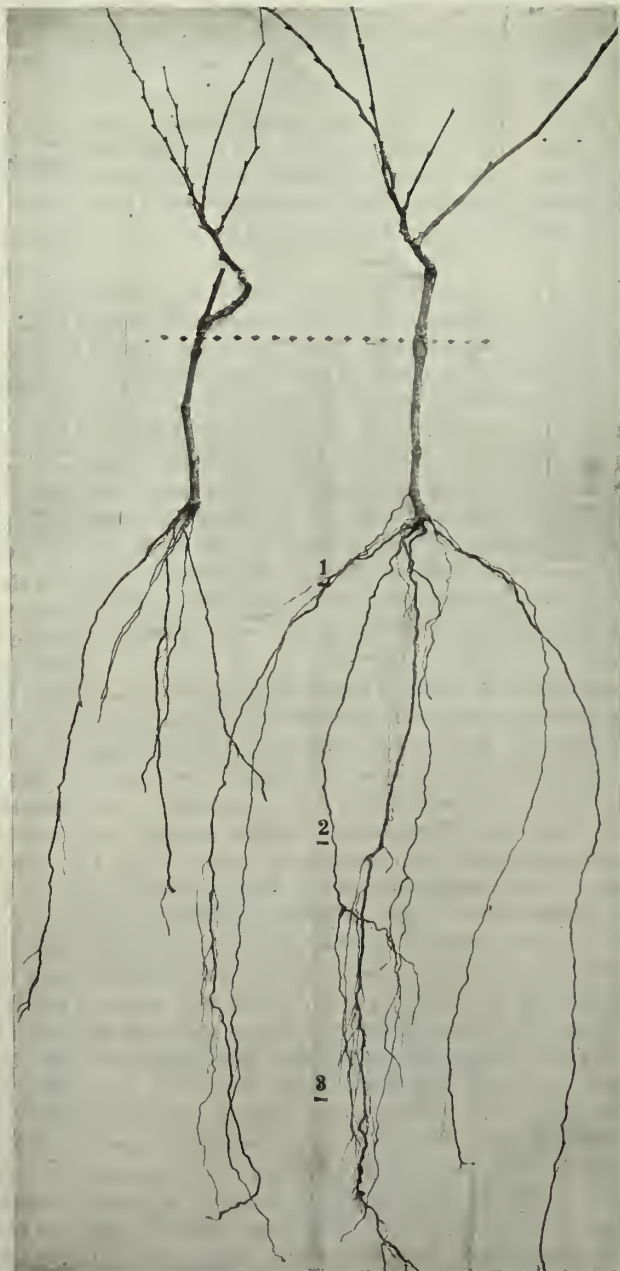
A very interesting bulletin has recently appeared from the University Experiment Station at Berkeley, giving the results of a wide trial of growth and grafting of resistant roots which have proved best in the remarkable restoration of the French vineyards. Messrs. Bioletti and Dal Piaz have pursued this subject, under Prof. Hilgard's direction, for several years, and they give the first fruits of their trials for the public benefit. The varieties chiefly tested are those indicated in the leaf plate, which is given herewith, viz., Solonis, Rupestris St. George and Riparia Gloire de Montpellier—the last two being French selections from types of the wild vines of the Atlantic slope. We can but call attention to the work at the Experiment Station that those interested may apply for the full record of it.

An essential matter in the resistant vine is the character of its root growth. Criteria in this regard will naturally differ according to local soil and moisture conditions, and how these vines meet these criteria are strikingly shown in the photographed root growths which our engravings show. In many—yes, in most—places where vines are grown in California the deepest penetration possible of a strong root is the secret of success. On all our coarser, drier soils the root which gets down to the moisture will give the enduring and profitable vine. How the Rupestris St. George root does this, when it carries above a graft of Zinfandel or Flame Tokay, is shown in the lower picture more forcibly than words could depict it.

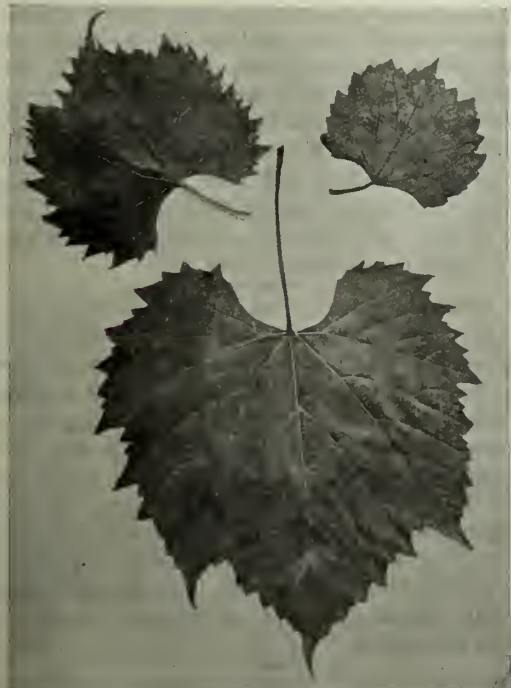
A very interesting showing is found in the upper plate, where Riparia, Rupestris and Solonis are contrasted. The rootings are average specimens of each variety of many grown on the University plat at St. Helena in 1899, and therefore show a single season's growth of nine months from the cutting. All the kinds received similar treatment. The notes show that Solonis roots were well developed and grew down to the moist depths, although not so straight as the roots of the Rupestris St. George. The small rootlets and root hairs were only formed at the end of roots, 3 to 4 feet deep in the soil. The tendency of the Riparia to send out horizontal—or even slightly rising—roots is illustrated.



Root Growths of Resistant Stock Compared.



Vine on left: An average graft of Zinfandel on Rupestris St. George. Vine on right: An average graft of Flame Tokay on Rupestris St. George.



1-Solonis. 2-Rupestris St. George. 3-Riparia Gloire de Montpellier.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, May 12, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Root Growths of Resistant Stock Compared; Solonis, Rupestris St. George, Riparia Gloire de Montpellier; An Average Graft of Zinfandel on Rupestris St. George and An Average Graft of Flame Tokay on Rupestris St. George, 289.
EDITORIAL.—Resistant Vines and How They Grow, 289. The Week; A Contrite Banker; Miscellaneous, 290.
QUERIES AND REPLIES.—Shall the Olives Come Out? Twig Borer of Olives, Prunes and Vines; Apricot Twig Injuries by Frost; Leaf Chafers at Fresno; Sulphur for Vines; Pruning Almonds; Bluestoned Wheat for Fowls, 291.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending May 7, 1900, 291.
THE DAIRY.—Feeding for Profit; Care of Milk, 292.
THE POULTRY YARD.—The Care and Feeding of Chicks, 293.
THE IRRIGATOR.—How to Irrigate, 293.
HORTICULTURE.—Requirements of the Olive; Freaky Walnuts; Thinning Double Peaches, 294.
AGRICULTURAL REVIEW.—295.
THE HOME CIRCLE.—May Morning; A Worker's Hymn; Philip's Promotion; Women in Club Life; Trousseau Makes the Man Propose, 296. A Symphony of Life; Throwing Away Chances; How Russell Sage Started; Satisfied; A Blind Shot; The Problems of Polygamy, 297.
DOMESTIC ECONOMY.—Care of Household Linen; Lemon Pies; Confection from Orange Rind; Prunes as a Remedial Diet, 297.
THE MARKETS.—Produce Market; Fruit Markets, 298-299.
THE STOCK YARD.—Some General Facts About Belgian Hares, 300.
PATRONS OF HUSBANDRY.—Grass Valley Grange; San Jose Grange, 302.
THE VETERINARIAN.—Answers by Dr. Creely.—The Heaves; Teeth Need Fixing; Warts Around the Eye, 303.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 301. Death of a Leading Seed Grower; To Study the Grazing Question, 302. Santa Barbara Notes; Santa Clara Fruit Exchange; The Skunks of California, 303.

The Week.

Spring rains are exceptionally generous this year, and especially so in regions where they are usually lightest. The relief which our friends in southern California experienced in receiving a good soaking, even so late as the first week of May, causes all to join in their pleasure. The water will help, and the fact that it really can rain hard again is encouraging to a degree which those who have not thirsted can hardly know. All who have suffered will now be in better heart to go forward to the beginning of a new rainy season, which is not now so very far away.

Rallying in the interests of the prune and raisin combines has continued actively through the week. On Tuesday it was reported from San Jose that if 2000 additional acres could be signed up, the 90% of the Santa Clara crop would be covered. It is expected the requirements will be met by May 19th and then the enterprise will go. At Fresno there has arisen a prospect of proceeding along the same lines as for the last two years, instead of according to the newer proposition of self-packing by growers. It would seem to be wise to continue an arrangement which has yielded so much benefit than to lose that because something better is not now within reach.

Wheat has been sagging here and at Liverpool and the situation seems weak though no material drop has occurred. Futures are, however, in worse shape than spot. There is a chance of a better freight supply, as more ships are likely to be available in the Pacific shortly. The present visible supply for future engagements is considerably better than a year ago. Barley and oats are steady: colored oats being a little firmer. Corn is unchanged, with yellow scant and white abundant. Hay showed a little disposition to rise but sank back again. Receipts are not heavy but movement is slow. Beef and mutton are quiet: choice veal is firmer. Hogs are a little off: Eastern markets are lower and that turns the product of Utah and the central West this way so far as it can be used. Butter is steady and going at full rates as packing helps with good offerings. Cheese is readily taken and an advance is talked of. Eggs drag a little; Eastern are still coming, though the margin is narrow. Bakers and others count that they get more weight to the dozen with Eastern eggs and have a free case to sell also. The poultry demand is lighter and

common chickens about 50 cents per dozen lower. Dry beans are unchanged. Old and new potatoes are moving well. Onions are lower. Some rather belated Australians have arrived and find things different now. Summer fruits are in freer supply and citrus weak except fancy Navels. Wool is still slow, though country sales are being made. Rates are lower than expected. Nothing is doing here yet.

A Contrite Banker.

The assembly of the Bankers' Association in Sacramento last week brought into public view a California banker who dared to wonder aloud whether the orthodox attitude of the bank toward the borrower involves sound principle and good policy. Common people have passed wondering on these points; they are quite sure that bankers often do cruel and senseless things to those who come under their power; also that the things they do are often foolish and unprofitable both to the banker and the bankrupt. The novelty of the affair lies in the awakening of a banker to these facts: the presence of a contrite heart in the bosom of a banker.

In an essay read by an interior banker at the Sacramento meeting of his guild, according to a fragmentary report which comes to our notice, we find these statements:

Many years ago there was printed on the cover of the Bankers' Magazine as a banking axiom, "No forbearance or indulgence should be expected." At that time and during many years following I believed it to be true, and an imperative duty to make this axiom a guiding principle for the safe management of a bank. I am going to plead for the relaxation and modification of a rigid and, as I believe, a dangerous principle. I plead for a higher conception; I would remove it from the field of mechanics and breathe life into it; I would give it brain for direction, and a feeling for humanity, that it might have ability and heart to meet emergencies as they arise. Every corporation to-day in this free republic is struggling with the great problem, how to allay discontent and maintain revenue. Many, by mistaken policy, have been forced to unreasonable and even humiliating concessions—unnecessary could they at the beginning but have realized that their relation was with human nature, with man striving to maintain and struggling for his hearthstone, a bitter struggle which will not tolerate obstruction. To our shame, the conviction is general that money is the synonym for oppression.

Am I wrong when I say that methods of trade and finance are responsible for violent fluctuation? Could not disaster be avoided by attaching a governor to the engine and having an engineer skillful enough to adjust it to meet unusual pressure? There is need of referring to the panic of 1893 for illustration. Every banker of the time had practical experience of danger, and I trust has profited in proportion. The item on our books, "real estate taken for debt," which has become so prominent since that time, teaches us a lesson—it teaches us that we should have made haste slowly.

Farmers who were permitted to hold their lands have paid off debts as never before in the history of the country. Banks which have farmed have almost universally failed to derive a reasonable revenue. There have been many unwritten tragedies to which the time gave birth. The fact that the country has steadily depopulated and the cities become congested is evidence. Census reports show a falling off of school attendance in country districts, which means a falling off of revenue for school support. A blight has been on the land, and there is an expression of hopelessness on many faces. The serious fact is that the army of the discontented has been recruited by the enlistment of each dethroned free holder. Am I a heretic when I place much of the responsibility on the banker?"

This strikes us as an instance of confession which is good for the soul. It would be conceit for us to judge that this financial brother emerges from the confessional a better banker, but we are very sure that he comes forth a better man for his struggle with the deep waters. We are free to claim that his advanced manhood will yield him a broader view of the relations of men and things and which will enable him to reach a higher plane in banking as it would in any other human activity.

We believe that bankers are bad members of the body politic according to the degree in which they are actuated by greed, narrowness, ill judgment of men and things and ignorance of the agencies which they employ. They are bad men just as other men are bad and for the same reasons. In their professional life bad bankers destroy their victims just as bad doctors do: sometimes they kill them to get possession of their fortunes: sometimes they simply let them die through their own stupidity and ignorance and lose patients without gain to themselves. Bankers who make loans in order to supplant the owner in his holding are sharks for whom the community has little mercy. We believe there are few of them, but bankers who are stupid and ignorant and near-sighted are many. They are lavish when they should be cautious and they are cowardly and nervous when

they should be courageous and strong.

We do not comment upon bankers in their attitude toward commercial risks; we do not know anything along that line except as we share in the public amazement that bankers should throw tens of thousands into the hands of wildcat promoters and tradesmen while they put the honest, conscientious and trustworthy merchant on the rack and crush him with their pessimism. Such things are common, according to current gossip, and the character of the leading debtors when statements of bank failures are announced shows the suffering depositors that bankers have trusted their money in promotion of ventures which they themselves would not for a moment contemplate. Certainly in these times, leaving aside all questions of honesty, our bankers need more common sense, better judgment of men and things, and that they should be not only better but brighter men.

In their attitude toward agricultural security, both in farmers and farm property, we do know bankers better, and that is the line along which the convention essayist, who is a country banker, traces his confession. Bankers are certainly to blame for much of the discontent, discouragement and individual ruin which has been abroad in the rural districts during the last few years. They have at one time been lavish of loans, which encouraged a land owner to undertake costly improvements and development schemes, which either the effort or the borrower's capacity or both did not warrant, and soon after they have crushed him out in their nervous haste to realize even part of what they loaned—too great haste to get in, followed by too much haste to get out, and destruction all around. They have certainly impaired agricultural credit and given rural security a bad name by such operations. Another direction in which harm has been done to the same security has been in lavish support of wild-cat ventures in developing and colonizing, enabling swindlers to float ill-placed and ill-furnished boom schemes in the name of legitimate agricultural and horticultural progress. While bankers have wasted funds in such ventures, which they should have scouted, they have denied help to men who could have carried modest enterprises for which they had knowledge and capacity, or else, having such promising debtors, they cast them out of their holdings as scapegoats for their own sins and have given the best of all security, which is well located and managed agricultural property, a bad name in the ears of the community.

These are not things for which our contrite banker acknowledges heart failure, but they will occur to the public as additional reason for his recourse to the confessional. Of the things which he thinks should change in the policy of bankers we can only express the warmest approval. Banks are wrong in taking possession of farm property if they can avoid it by any reasonable sacrifice and concession. The interest which they exact is out of all reason and if they should yield a part of their usury they could put the debtor in good shape on their books until he could save himself and save them also. Because it is a fact that no man can farm as well as a farmer, and while he can be kept upon the farm, if he is a man of reasonable energy and good habits, the whole community will be stable and safe. Let the banks keep all good farmers on their farms. In older countries the Government does this by suitable schemes of agricultural credit. In this country it may have to be done by the individual, and, if so, it will be through the newer and better conception of the banker's relations to their patrons and to the public which has dawned upon our contrite friend.

An admirable monograph on the climate of San Francisco, by Alexander G. McAdie and George H. Wilson of the San Francisco office, has been published by the Weather Bureau at Washington. It contains exact data from the beginning of meteorological observations in 1849 and thus affords half a century's scope for the careful descriptive notes which are made. It presents not only the records in detail but arranges the results in striking diagrams. The work reflects great credit not only upon the diligence of these officials but of their spirit in undertaking such a vast amount of research in addition to the current work of their office.

The New York Legislature has appropriated \$4460.25 for payments to owners of animals killed under the tuberculosis provision of the health law.

QUERIES AND REPLIES.

Shall the Olives Come Out?

TO THE EDITOR:—I have a few acres of three-year-old Mission olives planted at 30 feet distance, with Muir peaches in the center of each square. If what is now being said about the unprofitability of the olive is true, I shall take out the olives and put in prunes, apricots or peaches next winter. What do you think about it?—GROWER, Sacramento valley.

If you will watch our columns from now until next winter you may find the olive situation becoming clearer on either the affirmative or negative side. On another page of this issue you will see that the affirmative has its innings. We are quite clear on one point and have been for some time past, viz: that no more olives should be planted at present, except by those who are satisfied that they can get good crops and can profitably dispose of them. This determines both the bearing in the special place and the ability to profitably handle the fruit, and this is a safe guide to proceeding with any fruit. Certainly no more olives should be planted upon merely prospective conditions.

We are also pretty well assured of one other point, viz: if we had thrifty young Mission trees in a region of light frosts, and on good soil with abundant moisture available, we would not root them out at present. We believe that the right variety of olive in the right place will bear profitably with proper pruning and care and irrigation when needed. The fact that so many olive trees are being taken out now, will make the market outlook better for those who can get the fruit. We imagine our correspondent has his trees in a place where the bearing has not yet been fully tested, and, if the soil is rich and deep and moisture adequate, we should hold the trees for future trial. They may be unprofitable, it is true; on the other hand, they may pay well in such a place, while unprofitable in other places. We would take such chances on an investment already made, but we would not plant another tree until the demonstration is made for the locality.

We should be stronger in this waiting policy under such circumstances as our correspondent describes. To replace the olives with deciduous trees, all of them to be retained, would bring the whole planting too near together. Thirty feet is pretty wide for Muir peaches, it is true, but in good valley soil we would infinitely prefer to have them at that distance than at about half of it—in fact, at the latter distance part or all of the orchard would have to be cleaned out in a very short time. Finally, we would, under our correspondent's circumstances, hold the olives for further trial. If the peaches are well cared for, they will richly pay him for the whole ground, and if the olive situation should be decided in the negative, and he did not deem it wise to give the peaches the whole ground, an interplanting of vines or small fruits would be better than crowding the land with fruit trees.

Twig Borer of Olives, Prunes and Vines.

TO THE EDITOR:—I send you vine canes bored into at the base of the lateral shoots, also the insect found in the burrow. What is it and what can be done for it?—READER, Fresno.

The insect is a slim, purplish-brown beetle about ½ half inch long and its name is *Polycan confertus*. It first became famous for boring in olive shoots; afterwards it became more noticeable in the prune and recently has been quite prevalent on vines in the San Joaquin valley. It works in the spurs left at the last pruning, going in at a joint and working downwards. It is more serious on vines than on fruit trees, perhaps, because the vine pruner usually leaves just the number of spurs he wishes to grow, while on trees there are always supernumerary shoots which can be spared. The insect breeds freely in old stumps of oak, manzanita, etc., and therefore became first notable in clearings adjacent to old timber, but it breeds in old vine stumps as well, and is likely to be abundant wherever old stumps of up-rooted or dead vines are allowed to remain. One remedy is to burn up all old dead wood and clear the vicinity of all such breeding places. The other recourse is to spray the trees or vines, just after pruning, with a distasteful mixture like tobacco soap or carbolic soap, or something of that kind, which will stay in place and thus discourage the insect from biting into the twigs or shoots. It does not appear

yet that the insect breeds in the growing wood which he attacks; he seems simply to go there for a free lunch.

Apricot Twig Injuries by Frost.

TO THE EDITOR:—Is frost the cause of the sickly appearance of the enclosed apricot twig? The trees had a large crop of apricots on them, but the frost was severe enough to knock every one of them off. The trees are five or six years old, but are not very vigorous. They get frozen every year and have never borne any fruit yet. They are located where they can not get much irrigation and are on both sandy and white ash land, but appear to be all in the same condition.—H. W. WRIGHTSON, Oleander, Fresno county.

Yes; it seems fairly attributable to frost, as evidenced both by the enfeebled new growth and by the sap fermentation, which is discernible by the odor. The trouble is commonly called sour sap in the top. There is no sign of blight or disease of organic character. We think you are right in attributing the appearance to sap injuries by frost. The proper treatment would be to cut back to a good shoot below the injured parts.

Leaf Chafers at Fresno.

TO THE EDITOR:—Please note the enclosed beetles and sample of their work upon Muscat vines. They are also demolishing blackberry and rose blossoms. There are thousands of them. Just as soon as you disturb them in the least they drop to the ground. Can anything be done to stay their ravages?—H. W. WRIGHTSON, Oleander.

These are of the group of beetles known as leaf chafers and are a species of *Hoplia* which occurs yearly at this season in the San Joaquin valley. They are chunky beetles, a little more than ¼ inch long, with yellowish brown wing covers, which do not fully cover their gilded abdomens. They are good eaters and they can be poisoned by spraying the foliage they infest with Paris green, one pound to 200 gallons of water, or sheets can be spread under the plants, the insects dropped by giving the vine stump a sharp rap, and emptied from the sheet into water with a little kerosene on the top of it. They can be readily handled if they are shaken enough to keep up the 'possum game and the whole thing done quickly.

Sulphur for Vines.

TO THE EDITOR:—Is the better quality of sulphur enough better than the cheaper grades for sulphuring grape vines to pay for the difference in price?—W. E. PHILLIPS, Long Beach.

Yes; the cheap sulphur is coarsely ground and is altogether unsuited for sulphuring vines. It is the vapor of sulphur as generated by sun heat which is effective against the mildew. The vapor is most readily produced from sulphur in a state of extreme division; and, not only that, the fine sulphur readily adheres to the foliage and produces vapor just at the point required, while coarse sulphur will rattle off on the ground and perhaps beyond reach. It is often held that a weight of the best sulphur will go so much further in distribution than a greater weight of cheap sulphur that the difference in cost is largely made up. At all events cheap sulphur, if results are counted, is the costliest which one can buy.

Pruning Almonds.

TO THE EDITOR:—In your issue of April 28th, under the heading "Should Almond Trees be Pruned?" you quote the opinion of an "extensive almond dealer," to the effect that pruning would increase the yield. Do you think this theory is correct? I have several acres of almonds in San Joaquin county that have never paid expenses, though now eight years old, so I am deeply interested in any plausible solution of the cause of their non-bearing.—A SUBSCRIBER, New York.

We believe that pruning will promote almond bearing by securing a less amount of bearing wood and stronger wood. We do not believe that pruning is a panacea for non-bearing, because with some varieties and in some locations lack of fruit is due to causes out of reach of cultural operations. Every almond grower should try pruning a few almond trees along about the same lines as peach pruning, and report the results.

Bluestoned Wheat for Fowls.

TO THE EDITOR:—Is wheat dipped in a solution of bluestone, for seeding, injurious or beneficial to chickens?—POULTRY BREEDER, Wyandotte.

It depends upon how much bluestone has been ab-

sorbed. In some cases it might be reduced by soaking in fresh water to extract the copper salt, but the material is poisonous and any experiment should be made carefully. Surely some reader can report experience on this point.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 7, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

SACRAMENTO VALLEY.

The weather during the week has been warm and generally favorable for growing crops. Some damage has been done by the remarkably heavy rainfall, especially to cherries, strawberries and early hay, and it is reported that some of the early sown grain, where heavy, has been lodged. The loss on grain and fruit will be very light. Grain, uncut hay, orchards and vineyards have been materially benefited by the rain, and it is now believed that heavy crops are assured throughout the valley. Reports of serious damage by frosts and high winds during April were apparently incorrect, although deciduous fruits were somewhat injured by frosts in a few orchards. Citrus fruits are in good condition. Hops were improved by the favorable conditions and are doing well. The first carload of cherries was shipped from Vacaville on the 3rd.

COAST AND BAY SECTIONS.

Favorable weather has prevailed and all sections have been benefited by the rain. The condition of grain, hay and pasturage has been greatly improved, and prospects for good crops are much better than at this time last week. The rainfall was unusually heavy in some localities, but no serious damage has been reported. Bean and corn planting have commenced; there will be a large acreage of corn in Sonoma county. Haying is progressing; some of the newly cut hay was damaged by rain. Hops are looking well, though somewhat backward. Deciduous fruits are making good progress, but it is feared the crop will be lighter than average, owing to severe frosts in some localities.

SAN JOAQUIN VALLEY.

The weather has been generally cloudy and cool, with generous showers during the past week. The rains did some damage to the hay that had been cut, but owing to the rainy and threatening weather which has prevailed for the past two weeks haying has been delayed and the damage was slight. Crops of all kinds have been greatly benefited by the showers, and the prospects are now favorable for large crops of both grain and fruit throughout the valley. Many localities report prospects for the largest grain crop in several years. The late sown grain is doing nicely and filling well in most places. Early sown grain will make a large crop in all sections. Alfalfa looks good and will soon be ready to cut in many localities. Strawberries and cherries are being marketed.

SOUTHERN CALIFORNIA.

Cloudy weather prevailed the first part of the week and was followed by heavy rains on Thursday and Friday, extending to all sections and varying from 1 to 2 inches. This rain assures a bountiful water supply for irrigation during the summer, and has been of immense benefit to orchards, vineyards and all crops, as well as feed on ranges. Late sown wheat and barley were also benefited, and in some places will yield a small crop. Bean and corn lands were greatly improved. Hay was slightly damaged, but the yield will undoubtedly be increased by the rain. Lemon and orange groves are in excellent condition. Deciduous fruits are doing well in some sections, but a light crop is expected, especially of apricots.

LOS ANGELES SUMMARY.—The week was cool and cloudy, with the heaviest rainstorm on Friday and Saturday that has occurred this season. The rainfall was general and well distributed; in localities the precipitation was heavy, some places reporting 1½ inches to over 2 inches for the storm. The ground received a good soaking, and, while the rain came late in the season, great benefit resulted. Growing crops of all kinds, orchards and vineyards derived much good. Late barley, feed and pasture were revived, and in localities hay fields that were brown and abandoned are turning green, with chances of the grain heading and making a crop. The flow of streams has greatly increased; some are running full, and it is thought that some of them will carry enough water till midsummer. Mown hay was damaged to some extent, but much will be saved if warm, clear weather follows.—GEORGE E. FRANKLIN.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, May 9, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.		Total Seasonal Rainfall to Date.		Average Seasonal Rainfall to Date.		Minimum Temperature for the Week.		Maximum Temperature for the Week.	
	Week.	Season.	Week.	Season.	Week.	Season.	Week.	Season.	Week.	Season.
Eureka.....	.50	48.49	33.35	41.38	48	66				
Red Bluff.....	.36	22.29	20.08	25.18	52	76				
Sacramento.....	1.74	19.88	14.01	19.45	48	80				
San Francisco.....	.10	18.20	16.00	21.83	52	87				
Fresno.....	.16	8.50	7.18	8.46	50	86				
Independence.....	.23	3.65	1.21	4.50	40	80				
San Luis Obispo.....	.82	16.82	16.41	16.49	44	78				
Los Angeles.....	1.42	7.48	5.01	16.85	46	83				
San Diego.....	1.48	5.82	4.94	9.29	52	83				
Yuma.....	T	1.22	1.24	2.88	58	98				

THE DAIRY.

Feeding for Profit.

By JAMES E. BOAL, Los Angeles, at the University Farmers' Institute at Compton.

Feeding for profit is a subject in which every farmer or dairyman is vitally interested, and how to get the best results from our feed is what we should strive for. Taking it for granted that it was intended for me to speak of feed for cows giving milk, the best I can do will be to give you some of my own experience.

One would naturally think that if an animal had plenty of feed the best results would be obtained, whether it be for beef or for milk. But such is not the case. Feeding for milk requires a different ration than feeding for beef, a milk cow requiring much more nitrogenous milk-forming food than that given a fattening steer.

This question of balanced rations is a very important one, and the dairyman can well afford to spend considerable time in studying it. Persons and conditions differ; all cows are not alike.

Do some experimenting; the most cost connected with it is your time, and a farmer rarely counts time of much value. Divide your cows into small lots, try different feeds, not for a few days only, but for weeks or months. Note carefully, by actual weight and measure; write it down in a book which can be kept for reference. Most of us go at this kind of business in a haphazard way, and, after all the extra work, know very little more than before the experiment was tried.

HELPS TO KNOWLEDGE.—I shall not be able in this short paper to give any formulas. There are published many good dairy papers and books which tell the relative value of every kind of feeding material, some of which every dairyman should take and read regularly. "Feeds and Feeding," by W. A. Henry, and "Handbook for Farmers and Dairyman," by F. W. Woll, should be owned and frequently consulted by every dairyman. It is by this means that we get the benefit of other people's successes and failures, and save ourselves a great deal of time and expense; they are worth their cost many times over.

ALFALFA CAN BE SUPPLEMENTED.—In this southern part of the State it is not a question of what we can grow for cow feed, but what do we grow. Well, you say, everybody who keeps cows grows and feeds alfalfa. Alfalfa is good, very good; and, if cut and cured properly, comes the nearest to being an ideal feed for milk cows of anything known, as we can not have large, shady pastures with succulent natural grasses from 6 to 12 inches high and a mountain stream of water running through them the year round. Some of us can not have these conditions any month of the year, so we have to make the best use of what we have. Alfalfa, however, needs something else fed with it in order to get the most good out of it. Bran is a universal cow feed; yet my experience is that I have never received my money back for the amount spent for bran when fed with alfalfa, and I have fed carload after carload of it. Why? Because they are so near alike. Chemical analysis show them to be very similar. The superintendent of a large grain ranch came to me one day and said: "We keep three cows, and yet don't get milk enough to supply our table." I asked what he fed them. "All the alfalfa hay they want, besides bran twice a day." I suggested that he take some of his corn and have it ground and feed from six to eight pounds of the meal each day, instead of the bran. In a couple of months he hailed me and said: "I want to tell you about those cows. They are giving about twice as much milk as they did."

SILOS.—We can grow a good many things that will help our alfalfa wonderfully, and in the past few years it has been thoroughly demonstrated that it pays many times over to have silos even in this country. There are many feeds that we can put into them at a very small cost, which will feed out in good condition. The first cutting of alfalfa, which has fox-tail, malva, barley and other things mixed with it, which, even if the weather would permit of its being cured, would not bring enough in the market to pay for hauling it off, if put in a silo will make a most excellent feed during the dry summer and fall. Oats and peas sown together will produce a wonderful number of tons per acre on our damp lands, and, when cut green, where the peas have formed and the oats in the dough, if made into ensilage, will increase the milk product very much. But corn makes the strongest, best ensilage. It can be grown cheaply; everybody knows how to grow it; it turns out many tons to the acre, and is put up at a time when no other work interferes. It is hard work while it lasts, but is quickly over and the best results are obtained from it. Understand, I take alfalfa as a basis of all feeds; it is fed every day in the year and these others come in to help out. We all know about the value of beets, pumpkins and citrons; they all fit in their places and can not well be dispensed with.

Some things that are fed give off odors that are

taken up in the milk. This can mostly be avoided by feeding after the milking is done and the milk carried out of the barn, as most of these odors are taken into the milk after it comes out of the udder, while it is warm, standing in the pail.

ABOUT COWS.—The old story about feeding butter fat into cows frequently bobs up. By feeding you can make a cow fat and sleek, improve her looks and increase the quantity of milk very considerably, but can not increase the quality of milk to any great degree. In other words, you can not make a cow which in normal condition gives 5% of butter fat, by feeding alone, increase to 5½% or 6% of butter fat. That has been tried many times over, both by scientific and practical experiments, and right here let me tell you one of the great secrets of success: get cows that give a good quality of milk and then, by proper feeding and care, get a large quantity. Don't waste time trying to make your poor cows better. Sell them to the butcher, give them away, anything to get rid of them; it will pay you in the end. Most of the experiment stations of the different States, as well as up-to-date dairymen, have thoroughly proven that fact.

The Indiana Experiment Station has lately been making special studies of leading dairy farms in that State, and their laboratory experiments have shown:

First.—The quality of the milk depends largely upon the individuality of the cattle.

Second.—The cattle must be healthy.

Third.—That the food must be of good quality and properly balanced.

Fourth.—That the stables must be of sanitary construction.

Fifth.—That the milk be exposed to the minimum of contamination from the cow and stable while being drawn.

Sixth.—That the subsequent handling of milk be such as to exclude all possibilities of infection; that the milk should retain its natural flavor; that it should not be subject to a change and should be kept for a reasonable time.

DAIRY PRODUCTS.—Perhaps it is not generally known that there was produced in this State last year—a dry year—over \$14,000,000 worth of dairy products; more than the grain or gold produced; that the forty-three or forty-five creameries south of the Tehachapi produce only about one-fourth of the butter used in the Los Angeles market; that Los Angeles county produces the most cheese of any county in the State, and that the largest cheese factory in the county has not been able to keep a cheese until it was thirty days old for many years past.

DAIRY PROFITS.—Well, you say, does dairying pay? For five years I realized \$10 per ton on the ranch for alfalfa hay by feeding it to milk cows, when it was bringing from \$3 to \$4 per ton in the field and being hauled away. At different times I bought cows, hired them, took some on shares, had from five to sixty-five at a time, and I always made it pay. Of late years, in company with others, am now milking upwards of 200, and we are not working entirely for our health! In our neighborhood last year there were ten new buildings erected, mostly dwellings on the farms, costing from \$500 to \$5000 each. Over one dozen new pianos were purchased and a great majority of them paid for, and the cows furnished most, if not all, the money.

Yesterday I heard of a lady left a widow with two growing girls to bring up and educate. They had a small home and five acres of ground. She got a friend to advance her money with which she bought six cows. In eight months, besides supporting her family, she had paid back the money borrowed and had \$100 with which she was going to buy three more cows. There is not much question about the pay, if a little common sense and intelligence are used.

You say: "Well, now, he has not told us anything but what we knew and have known for years." In this day and generation it is not always the most intelligent persons who are the most successful, but usually those who persistently apply the knowledge they possess.

Care of Milk.

By J. J. HARSHMAN of Compton, at the University Farmers' Institute.

It has been said that eternal vigilance is the price of liberty. It is certainly the price of good butter and cheese. In considering this subject, we wish to impress upon the dairymen the fact that they cut a much larger figure in the production of a good article of butter or cheese than they give themselves credit for, and are largely responsible for much of the second-grade butter and cheese put upon the market. Much depends upon the condition of the milk when it is delivered at the factory. And no cheese or butter maker can make a prime article from milk which has not been properly handled or cared for. Don't risk ruining a whole vat by putting in a few gallons of tainted milk, caused by poor sanitary conditions, sick cows or those too early in lactation. Don't use the factory as a dumping ground for milk that you would hesitate to put upon your own table. I would not have you think that anything is good enough for the factory. This would be poor

economy. It would not only injure the factory reputation, but would certainly revert to your injury in the shape of diminished dividends.

REJECTION OF BAD MILK.—The carelessness of some dairymen may cause others to feel that it is useless for them to send good milk or to take care of it, if it is to be put in the same vat with their neighbors. But this conclusion is far-fetched if the factoryman do his duty by testing for taint, and reject that which he knows will not make a No. 1 article of butter or cheese. It may take some nerve to do it, but in justice to all concerned it must be done. But the product upon the market is conclusive evidence that he has not always done so. The fear of offending and probably losing a patron, notwithstanding the promptings of his better nature, and knowing the consequences of using such milk, will stifle his conscience and commit the criminal act of pouring this putrid mass into a vat of healthy, pure milk, thus rendering the whole unfit for use. It is a trying place for a factoryman, whose principles are not well established, who finds himself surrounded on all sides by sharp competition. But, from every point of view, it pays to be honest. By taking a firm stand for the right you may lose some milk, but it will be that which you can well afford to spare, and which will be of no credit to your competitors' product. By all means take no milk which you know will lower the standard of your butter or cheese product, and to the dairyman I would say: Be an example in cleanliness to the cheese factory and creamery, and compel them to follow suit.

GET GOOD MILK TO CARE FOR.—But to my subject, the care of milk. This, by rights, should be preceded by the conditions which govern its production and the condition of the milk before being drawn from the cow, as the success of the care of the same depends in a measure upon this. In this connection I will say that cows should not be fed unhealthy food or be permitted to drink stagnant water. Never dog your cows, or allow them to become excited by hard driving or loud talking. Never abuse them. Give them plenty of good succulent food to eat and pure water to drink. Keep them as happy as possible. Milk quietly, quickly, cleanly and thoroughly. Cows do not like unnecessary noise or delay. Loafers, dogs and cats are not needed at milking time. Now, when good sanitary conditions exist in and around the barn and corral, we have a solid foundation to work upon, and until this is fully established we need not expect the best results.

CLEANLINESS.—An eminent sage in the dim past is reported to have said that cleanliness was next to godliness, and I would venture the assertion that but little second-grade butter or cheese is made without the aid of filth. Tainted milk is not, as is usually supposed, that which has begun to sour. Not so. It is generally that which has come in contact with filth and has commenced to decay. In this condition it is laden with injurious bacteria, which baffles the skill of the cheese or butter maker. He may make a passable looking article, but he can not give it the flavor. The flavor is gone. He may fool the merchant, but he can not deceive the consumer. Anywhere that filth is found, in the manure pile, filthy corrals, pig pens and even in the seams of half washed milk utensils, are good hiding and sprouting places for bacteria, and no ordinary washing will eradicate them. These germs are the smallest of vegetable organisms and can be seen only by the use of the most powerful microscope. But they reproduce themselves with great rapidity. They are very light and are found floating in the air where filthy odors abound. Hence the necessity of aerating your milk in a pure atmosphere. I will give you, in addition to the hints already given, rules which, if strictly followed by the dairyman and the manufacturer does his duty, we will realize a surprising advance in price and demand for our product.

Observe and enforce the utmost cleanliness about the cows and all milk utensils. Before sitting down to milk, brush all the dust, manure and loose hair from the cow's sides and udder, thus preventing the introduction of myriads of bacteria into the milkpail. Never wet the teats while milking, but milk with dry hands.

Don't use the milk for three weeks before calving, and from three to five days after. The latter is the safest.

Aerate each cow's milk as soon as it is drawn. The aerator must be placed in a pure atmosphere.

The cans should be placed upon a platform or rack out in the open air, regardless of weather, with slats beneath them to permit a free passage of air underneath. Never let the can of milk set on the ground, or in a building. I repeat it, don't let the milk set in a stable or corral.

Put your night's milk in all your cans and in the morning pour the night's milk all together, so that the morning's milk can be taken to the factory separately. Always leave the covers off the cans until ready to start for the factory. In warm weather the cans should be covered with a canvas to keep cool and clean from dust while on the way to the factory. Milk should be delivered by 8:30 A. M.

If whey or skimmed milk is returned in the cans, they should be emptied at once and thoroughly cleaned. First rinse in warm water and wash with soda or one of the many preparations which is equally

effective: then scald in hot water and place in the sun.

In conclusion, I would say it is doubtful if there is a more favorable section for dairying in the world than Los Angeles county. Our markets are second to none. The fertility of our soil is unquestioned; our productions are varied, and, when our resources are fully developed and their possibilities reached, we shall look back with satisfaction at our achievements. Success is knocking at our doors. We must meet our responsibilities. We must take our place in the front ranks or fall behind.

DISCUSSION.—Some dairymen present took issue on the point of dry vs. wet milking. It was put to vote and declared to be the consensus of opinion that dry brushing of the udder was the most cleanly method, although washing of the udder with warm water was declared permissible and sometimes advisable. Wetting the teats with the milk was declared abhorrent.

THE POULTRY YARD.

The Care and Feeding of Chicks.

George R. Albers of Los Angeles prepares for the Pet Stock Tribune a very suggestive detailed account of how to proceed to secure a good increase of the flock. Long before the little ones are hatched, we must settle one or two fundamental matters, of which the first one is, Shall the chicks be raised by brooders or hens? Under ideal conditions the chicks will thrive best and be most conveniently cared for in brooders, but most people do not have ideal conditions; poultry is not their exclusive business, and they must make the best they can of existing circumstances. Many do not even do this. It would not be just to the subject to fail to mention the thousands of examples like the one given below, but the remedies need not be touched upon since the owner of the birds will not read this paper.

How Not to Do It.—A. has a hen sitting under the house; she will hatch hundreds of mites and a few chickens. When the latter are ten days old A. will go to the poultry supply store or grocery to buy a 25-cent package of condition powder, and explain that his chicks are droopy, notwithstanding he has given them pepper, copperas and bluestone. The store keeper will suggest insect powder or lice killer, but A. will resent the insinuation intended to get his money, and his subsequent experience will show that he has thrown away what he did spend. He raises his fowls under "natural conditions" and soon demonstrates that "chickens don't pay." To assume that the incubator and brooder offer a way out of his troubles is a little better than to expect to give health to the chicks in the form of pepper or carbolic acid, but it is an assumption still and leaves the chicks yet to be raised.

THE BETTER WAY.—If the business is on a very small scale, and the hens are hatching one brood at a time, they must usually raise their broods. Dust hen and nest well with insect powder twice during a hatch; about thirty-six hours after the first chicks appear place hen and chicks in a coop. Confine both hen and chicks to a space about 3x10 feet till the latter are about a week old, then allow the chicks, but not the hen, to run out. Keep them warm and dry at all hazards. When about three days old rub on the head of each chick a bit of grease, or of some head-lice ointment, as large as a grain of wheat. Feed substantially the same as brooder chicks. If we are raising chickens for profit, we have not the time to labor with hens as brooders, nor can we spare their time. A dozen or more hens may be set at once and the chicks transferred to the brooder. If incubators be used, there will probably be a few more cripples; but, on the whole, we will get good results. The incubator should have a nursery under the egg tray and the chicks should be left in the nursery till the oldest are a day and a half old. Do not open the doors to let the cold air in on the little ones, or they will die in the shells. If it is your first experience this may lead you to believe that you did not use enough moisture, for the shells will dry out around the dead chicks. If you used any moisture you probably used enough—that is a rule with beginners. Now the chicks are thirty-six hours old and ready for the brooders which you have prepared.

BROODERS.—For work on a moderate or a large scale it is best to use indoor, hot-water sectional brooders. For a very small plant an outdoor, hot-air brooder will involve the smallest investment. Such brooders should be in single units—not sectional—and should be portable. They are excellent for the older chicks that have lived two weeks in the brooder house and run, and have been moved out upon the lawn. The brooder house is not a screen to keep the wind from blowing the lamp out; it is not a protection to the brooders—it is the home of the chicks. They are not to choose when they will stay in the house; they must be kept in for the first three days and on all wet and cold days, and usually in the mornings till the dew is gone. If there were ample room inside the brooder house they could be success-

fully raised without ever going out of doors before they are six weeks old. The inside of the brooder house must be comfortably warm the year around, even though it takes artificial heat to keep it so.

The three-section brooder, such as is generally used, sits low on the ground or floor and has in each section a false bottom that can be drawn out for cleaning and can be raised or lowered according to the size of the chicks. Inside the brooder house the runs extend 5 feet from the brooder to the wall and in front of the house 15 feet on the ground. The brooder sections are 2½ feet long, so the runs are 2½x20 feet. Outside the house the runs are 1-inch mesh wire netting; inside they have netting covers and board partitions. All covers are on removable frames. We now have the house. Next, after lighting the lamp, and while the brooder is warming up, take out each false bottom, wrap it in paper, replace it in the brooder and cover it with a thin layer of bran. Cover the floor of the run with sand. Close the openings in the front of the house that lead to the outdoor part of the run and leave them closed at least three days. Place in the run a feed dish containing ground oyster shell and a drinking vessel that the little ones can not get into, provided with fresh water. Keep these fresh and clean and always before the chicks.

BROODER MANAGEMENT.—When the brooder has reached a temperature of 90° or 95° on a level an inch above the floor, the little chicks may be moved into it. We will put fifty to eighty chicks in each section of the brooder. A temperature of 90° should be maintained for two days or until the chicks are nearly four days old, when it may be allowed to diminish a little. A thermometer may be of service during these two days, but afterward the chicks are more trustworthy than the mercury. After a little experience, you can readily tell when they are comfortable. A pane of glass in the lid of one section of the brooder is convenient for studying the behavior of chicks. The glass should not be in the back of the brooder. When the chicks are comfortable, they sleep scattered over the bottom of the brooder; when cold they huddle, and even pile up; when too warm, they sleep near the entrance to the brooder or just outside of it and appear uneasy. It is more difficult to tell when the chicks are too warm than when they are too cold, for the crowding cannot be mistaken, and will not be mistaken if the "babies" are warm enough. The location of the droppings as seen in the morning will show what part of the brooder was occupied the night before. It is a melancholy fact that brooders annually kill as large a percentage of chicks as do hens. This would not be the case if they were all well designed and skillfully and carefully handled.

As time passes we allow the temperature to run down, but continue to visit the brooders each evening after the little ones have gone to bed to see if they are comfortable. After two to four weeks, depending on the season and the weather, we may put out the lamp during the day, and toward the last we will maintain a temperature of only 70° at night. Then we leave the lamp out entirely for a night or two before giving up the use of brooder. This is when the chicks have been in the brooder for six weeks, but they may well be left in it, even without artificial heat, for a longer period, if the size of the runs can be increased. The brooder and indoor part of the run should be cleaned out at least every other day, the outer part once a week, beginning when the chicks are two weeks old and have been allowed to go out of doors for about ten days. For the first two days the brooder bottom should be covered with bran, afterward with clean sand. At first the little fellows are apt to eat whatever is under their feet and occasionally will injure themselves by filling up with sand, if the brooder bottom is covered with it. This is the cause of some mysterious cases of bowel complaint. The remedy suggested is simple. Another common cause of bowel complaint is being hatched before the entire intestinal tract has entered the abdomen. Curiously enough, this is not necessarily fatal, for the chick may grow up and lay eggs and compete with normal hens although she has left a few inches of intestine in the shell from which she was hatched. Nature appears careless in this respect, not only with birds, but even with mammals. Such chicks may be recognized by their abnormally large navels, and are usually not worth trying to raise. They, together with the cripples, if any, should be chopped up and fed to the laying hens at the time the other chicks are put into the brooder. They are worth nearly a cent apiece as meat, and not nearly so much for fertilizer. Chicks that die should be burned or buried.

FEEDING.—The care of young chickens is of more importance than the feeding, but the latter should not be underestimated. Every one who feeds chicks ought to be make a study of what constitutes a well-balanced ration, composed largely of those foods that can be readily and cheaply had, delivered on his premises. Most of us do not do this, but we find by experience that certain foods that we can afford to furnish give good results. To make a complete study of the balanced ration we should have a working knowledge of agricultural chemistry. How many of us have? Fortunately, nature is able to select in some degree, from the ingredients furnished her. We have already settled the vexed question of the first feed by provid-

ing bran and oyster shell at the time we made ready our brooders. Many persons feed egg at first. This food is very acceptable to the chicks, but is usually expensive and is not necessary. Bread and cracker crumbs, steel cut oatmeal, cracked Kafir corn, browned cracked wheat, which should be carefully roasted, and millet seed are the proper staples from the beginning. The more dry food you give, the less dirt you will compel the chicks to eat, and the less danger of souring or giving food too wet or sloppy. It is well to moisten bread with sweet milk, but if you let the mass sour you must not give it to the chicks.

On the first day in the brooder the chicks will eat but little and you may safely keep millet seed or hard-boiled egg before them. For the next week or ten days, feed five times a day only as much as the chicks will eat up clean each time, and let one or two of the five meals consist of soft food, such as egg, bread and milk, scalded bran and cornmeal mixed, or cooked vegetables. When not giving egg, mix with the soft food 5% of blood or meat meal or fresh meat once a day. The experience of some is in favor of soft food for the first few days. This is because they do not provide grit, and the poor little creatures, hatched with empty gizzards and no teeth, must get along as best they can till they are able to find their own millstones to grind their feed. In our experience there is no one staple equal to millet seed, but when it is fed largely, granulated charcoal should be kept before the chicks part of the time to correct the tendency to looseness of the bowels. The charcoal is an aid to digestion and probably a slight protection against such disease as originates in filthy food. Besides the two classes of food already mentioned, the chicks must have green food daily. It is all the better if they get it twice a day. The grass in the small run will soon be eaten up, and then the chicks must be supplied with cut greens. Any or all of the following are more desirable than blue grass: Alfalfa, parsley, lettuce, swiss chard, and young and tender cornstalks or sorghum. Of these, the clover is the most perfect food, but a variety is better, even with green food.

THE DIETARY.—We now have before us a list of suitable foods, let us spend a day with the chicks. For the first food for the morning, we will place millet seed in the feed trough the night before, when we go around to close up the brooder house and to see that the little ones are all right for the night. The next meal, at nine o'clock, will be scalded rolled oats, not too wet and not too hot. The greedy little youngsters will not wait for the mash to cool. We will usually not let them out of the brooder house till we make the rounds at this time. Next, the noon meal of cut lettuce or alfalfa; then at 2:30 p. m., millet or steel cut oatmeal, and lastly at five o'clock in winter or nearly six in summer, browned cracked wheat. This is more variety than we would attempt every day and more meals than we will give after the chicks are a week or ten days old. During the second week, we will reduce the meals to four per day, and by the end of third week to three, but from that time on, the noon meal will include both solid and green food. The general character of the food will not be changed till we begin to fatten the chicks for market. They have shell or grit constantly before them. We must never fail to provide plenty of clean, fresh water. We must also provide exercise by making them scratch for their millet. It will be fun to give them a bright object, such as a brass screw too large for them to swallow, and watch the grand chase that they give the poor fellow who secures it. Their little lives are not very full of play, but we like to see them exercise, and somehow we think that our sympathy for their good cheer is one more of the 999 secrets of success in care and feeding.

THE IRRIGATOR.

How to Irrigate.

By J. G. KYLE of Riverside at the University Farmers' Institute at Perris.

Local conditions determine so many points in the skillful distribution of water that it seems not altogether wise to ask a non-resident to talk to you on the subject.

The first point is how much water can you depend on having to use during May, June and July for deciduous fruit. If you can have 30 inches a day of twenty-four hours for two days out of every thirty days, I think you can organize your land and flumes so as to do justice to twenty acres. This is double the amount of land for the same amount of water customary at Riverside.

PREPARATION FOR IRRIGATION.—First, grade carefully so soon as possible after the first rain in autumn. After the next rain plow deeply across the line of irrigation, put in a good flume on the proper side, or, still better, on two sides, so that you may be able to cross-irrigate. If you start a young orchard you will not need all your water for several years, but you can always sell it to some neighbor who started his orchard during the time when hopes ran high and water ran low. I like the plan of having the holes all dug before beginning to plant. Better

let the water have a good start at filling the holes. Plant in water, and let each planter roll up his sleeves above the elbow and two men shovel in the earth. The planter should spread the roots so as to give them a natural position. Plant across ten or fifteen rows, as you may have water, and it will keep ahead of you. Cover in your trees with dry earth, and straighten the inclined before the ground settles. In about two weeks you are ready for the first irrigation. Then run a good, deep furrow on each side of the row. Start the water in only one furrow. When the water has gone as far as 2 feet beyond the first tree block the furrow, and then open across to the other furrow from 1 to 2 feet above. Let the water run down the second furrow a little past the second tree. Block as before, and so on down the line. You will in this way put water on three sides of your tree, and by reversing the starting furrows you will have every time you irrigate a basin system which is altogether the most economical of water. The second year run two furrows on each side of the tree, and repeat the blocking and shifting of water from one furrow to the other near the trees. By the time the roots occupy most of the space you can let it run in the furrow straight down.

PREVENTING RUNAWAYS.—And now begins the most difficult part, which is to get the water through to the lower end and no farther. Most of our good people think this cannot be done. If they will offer a premium of \$25 to the man who does it successfully for one whole season the thing will be done. There is no more sense in a man's letting water run away from him than to let his horse run away from him or with him. The difficulty is in favor of the water. It needs no training—it only needs guiding. You would not think of putting a fine colt into the hands of an inexperienced rancher's man without mental resources. I have seen men who pretended to be irrigating have a story book with them and spend fully half their time under a tree reading. They would get up and walk along the flume and clean the moss from the holes and regulate, as they called it. At the same time the water at the lower end would be running to waste in some furrows, while it was not half way down in others. On my way home, a few days ago, I noticed a grove from which the water had just been turned off. It was a good grove, and usually well watered, but I counted sixteen furrows dry at the lower end, and most of these were, as usual, next to the trees. I must explain that this work was done by a man of very little experience. We still have rivers of waste water, but the man who received \$4500 for his crop on ten acres the present season had the least waste water.

SYSTEMATIC WORK.—The trees should be numbered at the upper and lower end of the field, so as to correspond. So soon as the water is fairly under way the man in charge should inspect the flow by walking across near the lower end, and with a tablet and pencil make a record by numbers of the flow, and then go to the flume and shut down, or add water, according to his records below. There is a mystery in how one furrow will allow water to pass on so much faster than its neighbor. With an open soil and a heavy fall I would recommend not to run water farther than 20 rods, as it will wash if you run a stream large enough to go far. It will cut and wash away your loam, and not spread laterally. Put in another flume and start again slowly, so that the water will soon run clear. Water with slickens in it does not spread laterally near so rapidly as clear water. After it has run a few hours and the ground is wet, heavy and settled, a larger stream can be run with safety.

FURROWING.—Furrow deeply from the start, so the main idea of irrigation is to get the water down to where the roots naturally live. If you furrow shallow your topsoil will soon be wet and you will think well of yourself, but in a few months or a year your roots will come up, and will be dried by the hot sun of July and August, and your trees will show sorrow before the thirty days comes round. If you could wet the ground underneath from furrow to furrow, and still keep the top dry, it would be perfect work. The furrows should be made with a narrow, sharp-pointed shovel, and the blacksmith should be called in to help in keeping them so. You should plan not to allow your ground to get dry below before each irrigation as when dry it does not take water so freely. You all know the instructions for oiling harness. You had better hire a good man to help you to get a good "ready," and absolutely put the water where you want it and nowhere else. Remember that a small, slow stream will spread faster laterally and go down deeper than a rapid stream. My plan is to get the water through so soon as I can without cutting. So soon as a furrow is through shut it down, so that it will just keep a wet shine in the bottom of the furrow to the end.

If you think irrigating an easy job, which anybody can do, I fear you will not succeed on a basis of 1 inch to ten acres. Cross-furrowing at the end of the field, the lower end, is a great help in old orchards. If this be not sufficient, then with a large hoe pull out these cross furrows as far into the dry middles as you may wish, leaving the end blocked. If there is a side fall to the field, work from the upper side. To compensate for this side draft, put more water on the rows you draw from.

HORTICULTURE.

Requirements of the Olive.

By J. A. BROWN of Hemet at the University Farmers' Institute at Perris.

When, last January, I read a paper favorable to olive culture before the University Farmers' Club Convention at Pasadena [see PACIFIC RURAL PRESS, Jan. 13, 1900], I felt that the correctness of my statement might with reason be questioned, in view of the fact that olive culture has been so generally condemned during the past year.

It is with more confidence that I appear before you, who, living within twenty miles of my home, may even at this late season, by visiting it, witness a few of the trees carrying over 200 pounds of fruit. This is no index to the productiveness of the orchard, however, as it is because of those individual trees overbearing and the peculiarity of the season that some of the fruit on those trees is yet immatured.

Taking the aggregate product of this twelve-year-old orchard, it shows an average yield of about thirty pounds per tree, or 3000 pounds per acre.

Two years ago the crop was practically the same. Next year, however, I expect a much larger yield, as every tree shows an abundance of fruit buds, excepting those trees which overbore this season.

This showing is due to natural causes, as my trees have received no better care than many orchards in other sections that have proved unfruitful. I irrigate, cultivate, prune and fertilize. Others, elsewhere, have done likewise without getting any adequate return.

I find that trees nearest to the irrigation ditches yield the most fruit, notwithstanding that I irrigate the entire orchard every month during summer.

IRRIGATION VITALLY NECESSARY.—In such winters as the past, irrigation is most desirable, if not absolutely necessary, and particularly on hillside orchards like my own, which do not hold all the moisture that falls. Not only is it necessary for maturing the fruit, by keeping it from shrinking on the trees—which is fatal to a pickling olive—but also for starting the fruit buds and insuring the tree a sufficiency of moisture until the blossom is off.

The particular part of the orchard to which I have referred is of the Mission variety, with a few Picholine scattering for cross-pollination. The situation and elevation of the orchard is similar to the hillsides around your own (Perris) valley, and like your own valley, too, I suppose, we are not afflicted with the black scale, which is so destructive to the olive tree in some localities.

If it be true that the failure of olive culture in California is in part due to propagation from barren trees, growers should see to it that cuttings are taken from trees that are fruitful.

Four years ago I set out some cuttings from bearing Mission trees, and picked some fruit from them this winter. They are now about 10 feet high, and give promise of a large crop next season.

THE BEST VARIETIES.—While the Missions and a few other varieties do well on their own roots, I am in favor of budding the more delicate varieties to the seedling or Picholine. I arrived at this conclusion from watching the growth and development of five acres of several varieties which are budded on Picholine roots and which were set out only four years ago. They bore a heavy crop this past season, and are full of blossoms now.

I also have twenty-five acres of five-year-old trees principally of the Mission, Manzanillo and Nevadillo Blanco varieties. There are, however, about fifteen other varieties interspersed, some of which cost me fancy prices because of their supposed superiority. Many of these have not yet come into bearing.

If you were to ask me which of all the varieties in the orchard I prefer for profit, I would unhesitatingly answer the Mission. It is the healthiest of all commercial varieties on this coast, is a good bearer, makes the best ripe pickle, and when grown on soil not too rich makes an excellent oil.

The Nevadillo Blanco is, so far as my experience goes, the least desirable of all the varieties. With me they have not borne fruit for two years past, and give no promise of a crop next season. A personal examination of many of the orchards in this and adjoining counties last week revealed the same condition, so far as this season's absence of fruit buds is concerned.

BELIEVES IN THE FUTURE.—I believe that we have witnessed the two extremes in the history of the olive in southern California. Nurserymen and others a few years ago were as extravagant in its praise as some disappointed ones are in denouncing it now. Nevertheless, I believe that in those sections suited to its cultivation the olive will prove a profitable and permanent industry.

I can show an average net profit per acre from my twelve-year-old orchard of about \$80 per year for the past three years. This, after deducting \$17 per acre per year for care of orchard and all other expenses.

Better results could be attained if olive growers would co-operate in manufacturing and marketing the product. A co-operative oil mill, owned by the

growers and conducted on the same lines as creameries and fruit associations, could handle the product of a large area. The brand of the corporation would be accepted by the public as a guaranty of purity more readily than that of the individual manufacturer.

Individual olive oil and pickle manufacturers, like individual butter makers, will produce a variety of grades of doubtful quality. Through co-operation the grower would have a permanent and expanding market for his fruit, and receive its full market value.

The condition that exists to-day of having some manufacturers buying olives at \$35 per ton, when others more remote are paying \$70, plus freight charges, could not survive under co-operation. Protection to grower and consumer alike has become an imperative necessity.

TO PREVENT ADULTERATION.—The adulteration of imported oil is less inimical to our interests as growers than the putting up of the same imported oil under California labels, which is now being done.

At the Pasadena convention I referred to a system of mutual protection that has, after several years' trial in some of the European countries, proved a success. It is called there the analytical control. Briefly stated, the regulations are that the applicants' goods are analyzed, and, if found pure, genuine, good and properly labeled, they are placed under the analytical control and an official stamp affixed to each package. Private purchasers or consumers of a controlled article, can have such analyzed free of charge—if in the original package—on application to any of the control's representatives, who are experts of recognized ability and position.

The control is comprehensive in its scope, applying with equal force and effect to all articles that are subject to adulteration.

Freaky Walnuts.

At the meeting of the Anaheim Farmer's club at George A. Hunter's residence last week, as reported by the Gazette, reports were made by a number of walnut growers that the indications for the coming crop were anything but favorable. The pollen blossoms seem for some reason or other to have failed, and where trees should have thousands of them they can in many cases be numbered by the dozen. The absence of the necessary pollen to produce the young nuts has therefore resulted in a great diminution of the setting, and in many instances where the young nuts should have formed in clusters the ground shows where many of them have fallen after attaining the size of a cranberry. On some twigs where as many as three or four nuts had set all but a single one have fallen, and these fall to the ground at the slightest touch. The pollen blossoms, which should be as large as one's middle finger, are found in numerous instances to be dried and shriveled up, after attaining the size of a small pea, being elongated in shape, perfectly dry, and black in color. Many of the trees throughout the valley have put forth leaves luxuriantly, forming beautiful objects in the landscape while trees alongside of them have not leaved out to any appreciable extent. This is true of softshells as well as hardshells, of orchards abundantly irrigated as well as those not so plentifully watered. The reason for the phenomenon seems to be past finding out. On some branches the small clusters of nuts shows one to have attained quite a good size, while others alongside of it are stunted in growth and sickly in appearance. The smaller nuts fall off at the merest touch, and in many cases even the larger ones have not sufficient strength to save them from falling to the ground. The immediate cause is the absence of pollen to fructify the tree, but what has caused the failure of the blossoms is a subject that was discussed with much interest by the members of the club, without arriving at any satisfactory conclusion.

Thinning Double Peaches.

TO THE EDITOR:—I read in rural papers in regard to thinning peaches that, if there are plenty of single ones, pull off all double ones. This year several varieties are most all double. I have thinned many double peaches with two hands, but find I am likely to lose 50%, no matter how careful I am. I have a method now that would surprise a good many, as it is very simple. With one hand place forefinger and thumb on the ends of double peaches, press together and one will snap off. In most cases the small one will drop, just as if you had taken a knife and cut one into. It will not loosen the other peach, and you can thin quite fast. Kindly publish this in the PACIFIC RURAL PRESS for the benefit of fruit growers.

FRANK G. BRUTSCHER.

Auburn.

TELEPHONE LINES throughout California and eastward are now in such state of progress that it is reasonably expected that by this time next year one can speak into a receiver at San Francisco and be heard in New York City. To European readers who do not always grasp the magnitude of distances on this continent, it may be said that from San Francisco to New York is about the same distance as from London to Astrachan.

Agricultural Review.

ALAMEDA.

NEW CAN MAKING PLANT.—To the Editor: Hunt Bros. Company have enlarged their fruit canning establishment at Haywards and are now ready for the season's operations. They have just completed the equipment of a can making establishment with a capacity of 30,000 cans per day. Here thirty-five skilled employees—no Chinese—are turning out cans at a rapid rate. The sheet tin is cut into sides and tops by specially designed machines. The sides are bent, ten at a time, by running between iron rollers. They then go to the side-solderers, who work very rapidly. They put the soldered cans upon a belt conveyor, which takes them to the workmen who stamp on the ends. These ends are pressed on by another specially designed machine. Here the cans are raised by an elevator and are projected through an ingenious process in which the ends are automatically soldered on. Then they are thoroughly tested to ascertain if there are any leakages; from here, after being dried by passing in front of a gasoline flame, they go to the warehouse. The entire process is characterized by labor-saving contrivances, ingeniously planned by J. J. Griffin, the superintendent. All the machinery was purchased in San Francisco of Murch & Gray, F. A. Robbins and others. The motive power is supplied by a 12 H. P. gasoline engine. In the cannery about 600 operatives—all but 100 of whom will be women and girls—will be given employment during the busy season.

BUTTE.

FRUIT REPORTS.—Oroville Register, May 3: M. Harwood tells us that orchards along the east side of the Feather promise excellent crops. T. B. Hutchins of Central House says that while the peach crop will not be heavy other crops will be very good. R. A. Moore, from the west side of the river, says the fruit crop is in very fine condition. J. P. Stevenson of Wyandotte says fruit in that region is good. One or two spots were hurt by hail, but still these orchards will have considerable fruit. Frank Cory of Pentz tells us that the fruit outlook in that locality was never better.

GLENN.

WAREHOUSES SOLD.—Orland Register, May 4: Several big grain warehouses in Glenn and Tehama counties were sold in San Francisco recently at private auction. The warehouses sold were the two at Goring, one at Manton, one at Orland, one at Greenwood and one at Durham. They were the property of the Grangers' Bank, which is now in liquidation, and were sold by order of the stockholders. The purchaser was E. J. Depew, who has been the lessee of the warehouses for a number of years. The price paid for the six warehouses was \$23,000.

LOS ANGELES.

FRUIT GROWERS' ASSOCIATION.—Pomona Times, May 2: The stockholders of the Pomona Deciduous Fruit Growers' Association held their annual meeting April 28: The directors are J. L. Colvin, L. H. Gallup, A. L. Taylor, A. Ingram, K. H. Dorsey. Secretary S. I. Ford's annual report shows the green tonnage of different fruits handled during the past season: Apricots, 381½; peaches, 89; prunes, 346; nectarines, 5; Kelsey plums, 5½; pears, 1½; total, 828½. The average prices (all grades) realized by the growers were: Apricots, \$30.10; peaches, \$15.30; prunes, \$18.65; nectarines, \$20.26; plums, \$22.28; pears, \$26.20. The amount of money paid for labor was \$5681.74. Mr. Ford thinks that there will be a fair crop of apricots, light of peaches and prunes, although it is too early to tell about the latter fruits.

NAPA.

CROP PROSPECTS.—St. Helena Star, May 4: Crops in Pope valley look fairly well and should there be late spring rains the yield of grain will be up to the average. At present, however, the farmers need more moisture. Corn planting is now in progress and the heavy shower of

Monday night and the cool weather throughout the week make the tillers of the soil wear becoming smiles.

PICKING GRAPES.—George Schonewald has a force of men employed picking grapes at his twenty-acre vineyard. It seems strange to do so at this season, but Mr. Schonewald's vineyard is on Rupestris St. George roots and only two years old, and he believes that to allow the vines to bear this early would injure their growth. They gave evidence of having at least one and one-half tons to the acre. Mr. Schonewald imported the Rupestris St. George roots from France and his vineyard has borne fruit in two years.

ORANGE.

ENLARGING CELERY GARDENS.—Santa Ana Blade, May 4: Farmers in the peat lands are making preparations for a big celery crop the coming season, and from all accounts the acreage will be almost double that of last year. D. E. Smeltzer will have 450 acres, and the total will probably foot up to 2500 acres. Buyers have already been over the ground, and almost the total acreage has been contracted for in advance. Dalton, Platt & Patterson are said to have contracted for 1100 acres, and, with Smeltzer's output, will leave about 950 acres to go to outside parties. This is made up by small growers, and will be handled by the California Celery Co. and the Earl Fruit Co., both of which are in the field as buyers. As a preparatory step in getting ready for the season's crop, D. E. Smeltzer has thirty acres planted as celery beds, from which will be grown 9,000,000 celery plants. About 1,000,000 plants are required to properly set out fifty acres. A. F. Swift comes next as a celery plant grower, and has thirteen acres sown to seed for that purpose. W. D. Lamb has recently cleared up and plowed about 100 acres; Casper Borchard has seventy-five men at work clearing and plowing. George Gray and Hockmeyer have each a fine stretch of land lately made ready for cultivation; John Bushard has leased his 190-acre tract to various small farmers, who are busy getting it in shape for a crop. J. B. Palin has just finished clearing his tract of 160 acres, and J. B. Robertson is clearing up 80 acres.

PLACER.

FRUIT COMPANY INCORPORATED.—Newcastle News: The Silva & Bergtholdt Fruit Company of Newcastle has been incorporated with a capital stock of \$10,000. The directors are E. B. Silva, J. E. Bergtholdt, J. F. Dudley, M. M. Silva and Louis Ames. E. B. Silva is president and J. E. Bergtholdt secretary.

SAN BENITO.

FRUIT PROSPECTS.—Hollister Advance, May 4: There was never in the history of fruit production in this county a year in which the prospects of an immense crop were better than on April 1st. Apricot trees are thickly set and prune trees gave promise of an immense crop. Taking into consideration the many young orchards just coming into bearing, it is safe to say that under favorable circumstances the crop of this season would have been almost double that of any previous year. But now the fruit grower has adopted the long face and blue complexion. The little coolness of April 8th will reduce the apricot crop to about one-fifth of the production of '99. Many orchards were frozen out entirely, while a very few favorably situated will have a fairly good crop. It is difficult to estimate the amount of damage done the prune crop. In San Juan valley and west of Hollister the crop is badly damaged, while southeast of town the prospect is fairly good; but, taking all in all, the prune yield will be far short of satisfactory.

SAN BERNARDINO.

WATER COMPANY INCORPORATED.—Redlands Citrograph, May 5: Articles of incorporation of the Mill Creek Water Company have been filed. The directors of the company for the first year are L. R. Van Leuven, Robert T. Curtis, W. H. Van Leuven, Nat B. Hinkley, J. M. Cole and M. L. Frink, of Old San Bernardino, and Chas. E. Day, of Los Angeles. The amount of capital stock is \$255,150, divided into 8505 shares of the par value \$30 each.

SAN JOAQUIN.

BEEF AND MELON CROPS.—Lodi Sentinel, May 5: Rain has come at opportune times for beets and now a large force of men has been put to work in the New Hope district cultivating. Watermelons have not fared well so far this season. Planters say the cold weather has been decidedly against their growth. Despite the apparent warmth of the air the soil has remained cold and dormant, the exact opposite to that demanded by melon seeds. However, the fine rain of the past week is expected to bring them along rapidly once they are well out of the ground. Melon growers are few this year.

SAN MATEO.

NEW AGRICULTURAL SOCIETY.—S. F. Breeder and Sportsman, May 5: Tanforan Park is destined to be the location of one of the best annual fairs, horse shows and harness meetings held in the United States. Negotiations with this in view have been under way for some time and culminated this week in the Horse Show Association of the Pacific coast reorganizing under the name of the San Francisco and San Mateo County Agricultural Association. The Horse Show Association is composed of some of the leading capitalists and citizens of this State, and during the years 1894, 1895 and 1896 held very successful shows at the Mechanics' Pavilion in this city. The present directors of the Association are as follows: H. J. Crocker, G. A. Newhall, M. Casey, W. B. Chapman, George Pope, J. B. Crockett, San Francisco; John Parrot, Walter Hobart, Joseph Grant, San Mateo; S. F. Boyd, San Rafael; J. L. Rathbone, Menlo Park. The new Association, some time in September, will give a grand horse show, and, in connection with it, will hold an exhibition of cattle, livestock of all kinds and poultry, besides a general agricultural display. In addition to all these, there will be a splendid programme of harness racing, for which generous purses will be given, with the idea of securing an entry list of the best horses on the Pacific coast. The Association will secure for this purpose Tanforan track and grand stand, and races will be held in the afternoon of each day.

SANTA CLARA.

FIRST SHIPMENT OF CHERRIES.—San Jose Mercury, May 3: Cherries are ripening rapidly and the crop promises to be a very good one. The first cherries of the season were shipped this afternoon to Los Angeles by R. E. Collins.

SHIPMENT OF STANFORD HORSES.—Mercury, May 7: Frank Covey, superintendent of the Palo Alto stock farm, started for Cleveland, Ohio, last Saturday with two carloads of Stanford's representative stock. The shipment comprises twenty-five head of two and three-year-olds, all from the famous Electioneer family. They will be sold on May 21st.

THINNING FRUIT.—Mercury, May 5: The present cool weather, with occasional showers, is very favorable to growing crops. Both grain and fruits are developing slowly, and we hear no complaints regarding the outlook. Some of our orchardists are thinning apricots and peaches, which, after all this cry of frost, were found to be too thick in many places.

SOLANO.

FIRST APRICOT SHIPMENT.—Vacaville Reporter, May 5: The first apricots shipped East from California this season were sent May 3d, being raised by G. W. Thissell.

PLUMS AND PRUNES.—The injuries to plums and prunes from which some orchards suffered materially, will be partially compensated by a large crop of Royale Hatives. Every indication points to one of the best crops of this variety which has ever marked the valley.

DRIED APRICOTS.—The price of dried apricots promises to be quite satisfactory this season. While we do not learn of any contracts having been made, yet we understand that buyers are willing to buy at 7 cents per pound now. This is probably indicative that 'cots will rule high.

FALL WILD OATS.—Wild oats seem to be making extraordinary growths this year. P. Lepley brought into this office a number of stalks measuring 8 feet 3 inches. Cary Bugbee also showed us quite a bunch he had pulled up on the road in the valley which must have been just as long.

HIGH PRICES FOR CHERRIES.—Prices for cherries seem to rule high in New York, judging from an auction catalogue of Vacaville cherries sold by the Earl Fruit Co. April 27th. The lowest price was for some Early Purple Guignes, which brought \$1.87½ per box, or 18 cents per pound. But the same day Guignes from the Sunnydale orchard and Buckingham & Watson's were being sold for \$2.62½ per box, some going as high as \$5.25, and Sunnydale Advance cherries bringing \$4, \$7.87 and two boxes selling for \$8.50, or 85 cents per pound. It is not unusual for the first cherries shipped East to bring \$1 per pound, but the phenomenal price of 85 cents per pound after the season is well under way is hard to realize as possible.

TULARE.

DRY IRRIGATION.—Tulare Register: M. C. Sipple is a believer in dry irrigating. He thinks he gets just as good fruit, just as good trees and with just as little work without water as other people do with it. He practices dry irrigation and practices it assiduously. This is the way he does it: He first puts a plow into the orchard and plows it clear to the beam, then he follows it up with a soil chopper

and that with a disc harrow. He has cultivated his orchard three times already and if more rain does not come he will go over the soil every fifteen days until the fruit gets so large and the limbs bend so low that he cannot get through at all. He can cover six or seven acres a day, and by going over and over eight or nine times in the season he has the moisture at the top of the ground all the time, and the trees just as happy and the fruit just as large as any of his neighbor's. Indeed, one row of his trees got irrigated from a neighbor's ditch last year, and, although he cultivated that ground as well as any of the rest of the orchard, the fruit was no better than the rest, the trees were no thrifter and the clouds were bigger and harder to get pulverized. This is not as laborious as it would seem, not as much so as irrigating and cultivating, and the roots of the trees are sent down where the water is, 8 or 10 feet below the surface.

TEHAMA.

WOOL SALES.—Red Bluff News, May 4: There has been a total of 2500 bags of wool disposed of in Red Bluff in the past twenty-four hours, belonging to fifty-seven different parties. The prices range from 14½ to 15½ cents per pound. The largest lot sold was by D. S. Cone—320 bags—for which he received 15 cents; the next largest lot was Cone & Ward's—283 bags—and so on down to the small producer with five bags. Wm. Flournoy and J. H. Benjamin received the top price—15½ cents—for their lots.

OREGON.

EXTENSIVE IRRIGATION ENTERPRISE.—Portland, May 4: An extensive irrigation project is outlined by corporation articles of the Oregon Irrigation Company. A vast tract in Crook county is covered by the maps of the company as the course of the five large canals the company proposes to construct from the Deschutes river. The secretary, D. D. Warner, states that work has already begun on two of the canals and will begin on the others very soon. Mr. Warner states that there are at least 387,000 acres that can be reached by his company's canal and that 100,000 acres will be watered as a result of the work now projected.

WASHINGTON.

NEW GRAIN WAREHOUSE.—Dispatch from Tacoma: The Northern Pacific Railway has taken steps to concentrate the wheat business tributary to its lines, and furnish producers and local buyers effective competition from exporting firms. To accomplish this the railroad has ordered the construction of warehouses on its Tacoma water front property. The warehouse will be 1700 feet long and 148 feet wide and will be devoted to wheat alone. Contracts were signed yesterday whereby these warehouses will be leased to George W. McNear & Co., Balfour, Guthrie & Co. and Kerr, Gifford & Co. Heretofore Balfour, Guthrie & Co. have been the chief exporters from Tacoma and there has been no competition. By building the warehouses and leasing them at low rental competing firms are brought here.



BUG BANE

TREE WASH!

STEAD'S "BUG BANE" is the best and cheapest wash known for either citrus or deciduous trees. Contains no poisonous chemicals. Is a fertilizer and tree tonic combined. Never clogs your pump or closes up the pores of a tree. **EASY TO HANDLE.** Always effective. In use for more than ten years by leading fruit men, some of whom use upwards of 20 tons per year. Their testimonials together with prices and full directions upon application.

Manufactured only by

G. D. STEAD CO. SAN DIEGO

Improved Fresno Scraper.

5-FOOT. WEIGHT, 300 LBS.

NEW STOCK. NEW PRICES.



HOOKER & CO.,
16 and 18 Drumm St., San Francisco, Cal.

WANTED.

A THOROUGHLY QUALIFIED ORCHARD SUPERINTENDENT for large place. Address, stating experience, etc., X, care Rural Press.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish.

Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular.

THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

May Morning.

I open my window to the joy of morning—
The joy of morning, now the May is here!
I see the light-shaft pierce the trembling
dewdrop,
And every grassblade sparkles with a tear.

O May! the hedge is fringed with snow-
white blossoms,
Thy pathway shines with dandelion's
gold,
The lilac scatters warm, delicious fragrance
From plump clusters in a leafy fold.

Intoxicated, from a cup of sweetness
The wild bee tumbles forth in reeling
flight;
He leaves the fickle moth to vain coquet-
ting
With bashful violets, nestled low from
sight.

Let us go forth in some old hillside orchard,
Take time to linger, and to rest the sight
On stretching apple boughs whose gnarled
branches
Are wreathed with tints of May in pink
and white.

For many a time this dreamy springtide
beauty
Will come to us again in darker hours,
Reminding wistfully that full fruition
Can never equal the unfolding flowers.

—Florence M. Metcalfe.

A Worker's Hymn.

If there be good in that I wrought,
Thy hand compelled it, Master thine;
Where I have failed to meet thy thought
I knew, thou thee, the blame is mine.

One instant's toil to thee denied
Stands all eternity's offense,
Of that I did with thee to guide,
To thee, through thee, be excellence.

Who, lest all thought of Eden fade,
Bring'st Eden to the craftsman's brain,
Godlike to muse o'er his own trade
And manlike stand with God again.

The depth and dream of my desire,
The bitter paths wherein I stray,
Thou knowest who has made the fire,
Thou knowest who has made the clay.

One stone the more swings to her place
In that dread temple of thy worth,
It is enough that through thy grace
I saw naught common on the earth.

Take not that vision from my ken;
O, whatso'er may spoil or speed,
Help me to need no aid from men
That I may help such men as need.

—Rudyard Kipling.

Philip's Promotion.

"All right," said Philip, struggling with his white tie. A servant had just informed him that his father wished to see him in the library.

Philip was arraying his comely self for the Mortons' ball, and as he finished he surveyed himself a moment, then taking his gloves he stalked down the stairs and into the stately library, where his father sat at a table writing.

Philip's father was a great railroad magnate, of whom most men stood in wholesome awe, but his stern face lighted up wonderfully as the athletic figure of his son came up to his chair and laid a hand affectionately on his shoulder.

"What is it, Excellency?" Philip asked, and the tones of his voice sent a thrill of pride through his father's pulses.

"Sit down, Phil," said his father, motioning to a chair near at hand. "Were you in that crowd last night that nearly wrecked a horseless carriage and frightened a horse that an old woman from the country was driving? She might have been killed if one of you—I fancy I know who—(Philip blushed)—hadn't taken a flying leap at considerable risk and caught the horse just in time and stopped it."

"Yes, I was there," said Philip. "You see, father, the boys took old Steele with them. He knows all about motorcycles and things like that, but not much else. But Steele put on airs, so the boys pulled him off the seat, and two or three of us tried to run it. It really ran us," said Philip, laughing. "Steele must have had his foot on something—we couldn't find it—and

you never saw anything go so, father, never. I really don't know where they fetched up; perhaps they're going yet, for Steele turned sulky and wouldn't let them know where the brake was."

"I should think not," said his father, smiling. "Of course, but for the accident there would have been no real harm in such a thing."

"Except listening to Steele's language, father; it was electrically blue, he was so upset, in more ways than one."

"But," went on his father, "is life never going to mean anything but a frolic and good time to you, Philip? You are through school, and it is certainly time for you to take a more serious view of life. You have no idea of what it means to earn your daily bread."

"Oh, but you do that for me far too well, daddy," said Philip, laughing. "In fact, you earn cake, too."

"Yes, that's the trouble, Phil, and as long as you are here it will be the same, I am afraid. My boy, you must cut adrift and steer for yourself awhile, I think."

"When?" said Philip, with startled face.

"Now," said his father, his voice trembling a little in spite of himself. "How much do you owe in town?"

"Oh, two or three hundred, I suppose," said Phil, his mind intent on his father's meaning. "You don't think I have done anything wrong or disgraceful, do you, father?" and Phil's voice was very anxious.

"No, no, my boy," said his father, promptly. "No, no, I am not displeased with you in any way, my son. Heaven knows how I will get on without you—but we won't talk about that now. You have passes on all the roads. Here is a check for \$500. Now go out West and begin at the lower round of the ladder and climb up. Here is a letter to my friend, the superintendent of the Great Western & Northern Road. He will start you at work. Good-by; don't come home until you have earned your promotion. It's all my fault, Philip, I haven't brought you up just right, but since your mother's death I haven't been able to refuse you anything."

There was silence for a moment, then Philip came to his father's side.

"You aren't angry with me, then, father?" he said.

"No, no, Philip, no, no, only anxious that you may grow up a manly man. Good-by."

Philip put his boyish head down on the back of his father's chair a minute, then went upstairs, rapidly changed his clothes, packed his trunk and valises, came down and caught the midnight train for the West, and it wasn't until he reached Topeka that he found he had left at home his check for \$500, and had only a little silver and his letter of introduction to the superintendent of the great road that threaded the West like a great huge artery.

He found the superintendent's office without difficulty and presented him his father's letter.

After the superintendent had read the letter from his great Eastern friend he looked keenly at the somewhat slender but athletic figure before him and smiled.

"I have an opening," he said; "but it is by no means a bed of roses."

"What is it?" asked Philip.

"Not especially hard work, but it is in a lonely spot. There is a cut-up the road about 150 miles. It is in the mountains, where washouts frequently occur, telegraph poles wash down, wires are broken, etc., so it is necessary to keep a watchman there continually. A railroad tricycle is furnished, also a shack, where, after a fashion, one can live. Wages, \$30 a month. Think you can stand it?"

The prospect was not alluring, but Philip had made up his mind to accept whatever offered itself without demur; so he said: "Yes, thanks; I will take it. I suppose there will be shooting and fishing in plenty?"

"Yes; plenty of that, fortunately. By the way, you will consider yourself my guest for a day or two if you would like—your father is an old friend of mine."

"Thank you, sir," said Philip, grave-

ly; "but I will go at once, if you please."

So the superintendent, well pleased with his new watchman's pluck, furnished him with a list of directions, supplies needed and passes. In the few hours before his train left Philip sold some jewelry and bought his simple outfit.

Only one train a day from either direction stopped at his station unless flagged. He was dropped at his new abode just as night was closing in, with supply boxes, gun, camera, valises—he had left his trunk in Topeka. He made many journeys up to where his little shack, or hut, literally hung on the mountain side, before his possessions were landed on the floor of his one room. It was cold, but the former occupant had thoughtfully left a box filled with resinous pine knots, and Philip soon had a fire crackling delightfully in the rusty stove, and, after a very frugal meal, he was so honestly tired that he slept as he had rarely slept before, though on a "shakedown" of fragrant balsam boughs, covered with his great roll of blankets.

Hunting, fishing and a touch of the outside world through the books and papers mysteriously sent him supplied him with recreation outside of his somewhat monotonous duties in the weeks that followed.

Fortunately Philip thoroughly loved nature, and the magnificent views all around him were a source of endless delight.

"When I've earned my promotion I'll bring his dear excellency out here," he thought. "I'll show him a thing or two that will surprise him. The only thing is there is nothing to do here that will earn a promotion."

However, one day, far up in the cut, he was tapping poles and scanning the track over a deep culvert, when all at once he heard voices below him. He dropped on his face and heard distinctly the details of a plan to rob the pay car, which would go through in about an hour.

Surely this was an adventure at last! He ran back to the place where he had left his tricycle, just as the mail train, which had side-tracked for a few minutes on account of a hotbox, was pulling out. "Whoop," said Philip, then he went a rope around the brake on the rear car, and Phil and his tricycle were going down grade tied to the lightning mail.

He had tied on behind a freight once or twice before this, and that was fun, but this beat tobogganing and everything else that he had ever heard of in the way of speed. His front wheel did not often touch the track, and he clung for his life.

As the mail cars opened at the side, no one saw him. "This means death," he thought, "if I am thrown off, and I think likely it's death if I stay on, but I must get home before that pay car comes past. Evidently this is either a promotion or a disgrace; there's no middle track."

The train was slowing up—though it never stopped—close by Phil's shack. Unfortunately the tricycle could not slow up with equal rapidity. Phil's box containing knife and pliers had tumbled off long before, and now the tricycle tried to climb the rear car, the rope broke and Phil flew off and landed near his own shack, fortunately in a pile of balsam boughs, while the mail car serenely proceeded on its way, leaving behind it a wrecked tricycle and a winded rider.

Two men who had been standing in Phil's door rushed to pick him up, and when his head stopped whirling around he looked into his father's eyes and saw the Western superintendent standing near.

At this surprising event Philip nearly lost his breath again, but knowing there was no time to lose, he gasped out the plan he had overheard of derailing the pay car, and then robbing it, and the car was nearly due now.

So the two, each supporting an arm of the dizzy watchman, helped flag to a standstill the pay train, and then, being forewarned, they went cautiously ahead, followed by the Eastern private car containing several railroad dignitaries and the pale young watchman

who had wished immensely to participate in the capture of the robbers.

The capture was effected with neatness and decision, and Philip was returned to his own abode where, after entertaining his father and employer at supper, they sat down before the fire to talk things over.

"I came out," said Philip's father with dignity, "to see how you were getting on."

"Badly enough without you, dad," said Philip, smiling, his hand in the old place, "but I couldn't come to see you until I had earned my promotion, you know."

"There was nothing in the plan that prevented me from coming to see you, though," said the older man, smiling up into his son's face. "And I really think you have earned your promotion, and I shall take you home as my confidential clerk."

"There's a bill for a broken tricycle" began the Western superintendent dryly. "Not allowed," replied his Eastern friend promptly. "It was broken in the company's service. Son, you are promoted."—L. E. Chittenden, in Chicago Record.

Women in Club Life.

The word "club," used by women to designate the beginning of what was really an educational and intellectually progressive movement, was the occasion of considerable misconception. Men could only attach to it the meaning it had for them in their own vocabulary, viz., a place in which to lounge, drink, smoke and play cards. This was far from the idea of women. To women it meant "opportunity," an experiment in co-operation which would enlarge their horizon, open the door to the acquisition of knowledge, and give to their social life a meaning and a purpose. It meant also, as was stated in the first constitution of the first women's club, to break down the walls of prejudice; to bridge the chasms between women; obliterate the lines of separation, and bring women together on the basis of womanhood alone.

Measurably, gradually and quite naturally this has been accomplished. No distinction of class, or sect, or opinion, has entered into the foundation principles of any woman's club. Each one, started at different times, and under varying conditions, by an apparently simultaneous impulse became an embodiment of purely democratic and altruistic ideas. Each for all, and all for each, was the motive which inspired their work and action, creating in time a curiously strong and vital sense of fellowship and unity of spirit and action. The first effort of these clubs was to form a more or less elastic organization and acquire orderly—that is, parliamentary—methods of procedure. This alone to women whose lives had previously been, for the most part, isolated and desultory, though perhaps filled with domestic cares, was a tremendous step in advance.

For it must be remembered that the club life of women did not begin with women leaders and agitators. It advocated no propaganda; it simply addressed itself to the woman in the home, and endeavored to satisfy her desire to know, and make herself more widely useful. An informal census taken several years ago revealed the fact that out of about 500,000 club women 95% were wives and mothers.—Jennie June Croly.

Trousseau Makes the Man Propose.

When a young man among the peasants of Bohemia thinks he likes a girl well enough to marry her he asks permission not to court her but to see her trousseau. In anticipation of this request all young women of a marriageable age have their trousseau—the result of years of careful spinning, weaving and embroidering—placed in a large painted box. The young man opens the box and examines its contents. If they are satisfactory he makes formal application for the girl's hand; if not, he is at liberty silently to go his way.

A Symphony of Life.

To live content with small means,
To seek elegance rather than luxury,
Refinement rather than fashion;
To be worthy, not simply respectable,
And wealthy, not simply rich;
To study hard, think quietly,
Talk gently, act frankly;
To listen with open heart to birds and stars,
To babes and sages;
To bear all cheerfully, do all bravely,
Await occasions, never hurry—
In a word, to let the spiritual life
Grow up through and above the common—
That is my "symphony of life."

—W. E. Channing.

Throwing Away Chances.

"One of the saddest things in life," remarked a woman of large experience, "is to see persons deliberately murder their chances of happiness. It is a fact not generally realized, but one nevertheless perfectly true, that happiness is possible to almost every one, and that every one possesses the elements of happy living, that may be developed or destroyed according to one's own volition."

"Of course, everyone knows from a moral point of view that it is our duty to do right and to be unselfish, but it might also be well to consider the question from its purely wordly aspects. Every business man realizes as a sound financial axiom that 'Honesty is the best policy,' quite apart from the question of right and wrong. Even so it is just as true that unselfishness and good humor 'pay' in social and family experience, for these qualities are literally the sunshine of domestic life, and any one endowed with such attributes can not fail to be loved and appreciated. Yet we see day after day members of families deliberately making their own unhappiness by temper, irritability and want of consideration, and then becoming morbidly unhappy because they are not popular. Why cannot such persons consider the matter from a selfish point of view, if from no higher standard? Why do they not ask themselves if it pays to answer irritably and to assert what they consider their petty rights?"

"With the outside chances of life which comes more or less to all it is the same way; some have the instinct to seize them; others let them slip through indifference or inertia, and they wonder why they are failures. O that I could preach the gospel of common sense so that it might reach the ears that hear not and the eyes that see not, and that I could make these young people realize these simple truths, which will give them if not the precise happiness that they long for, at least its nearest equivalent! It will affect not only their family that they are obliged to live with, but the outside world where they long to establish a place."

How Russell Sage Started.

"Simply because I have been fortunate enough to succeed is no reason why I should boast of my beginning," said the great financier, Russell Sage.

"What I have done others can do. The path to success is thorny, it is true, but any young man who makes up his mind to do so can acquire money."

"He must make cast iron rules at the start; to practice self-denial, regularity and temperance, a love for work, a rigid regard for the minutest detail of business, and, above all, choose the loss of every dollar rather than perform a single act of dishonesty."

"Failure is most frequently caused by falling by the wayside. Young men become victims of immediate pleasures rather than a long and courageous struggle to permanent success."

"My mother taught me the rudiments—reading, writing and spelling. That was the only schooling I ever had. I was a simple farmer boy, and worked on my father's place until I was sixteen years old; then I received a job in a wholesale grocery store in Troy."

"That was my first earnings, and it was not more than \$5 a month. I went into business for myself before I was

twenty-one. I had saved enough by that time to buy out the entire business. In 1863 I came to New York."

Satisfied.

Love wore a threadbare dress of gray,
And toiled upon the road all day.

Love wielded pick and carried pack,
And bent to heavy loads the back.

Though meager-fed and sorely tasked,
One only wager Love ever asked—

A child's white face to kiss at night,
A woman's smile by candle light.

—Margaret E. Sangster.

A Blind Shot.

A well-known divinity professor, a grave and learned man, had five daughters, whom his students irreverently named "Genesis," "Exodus," "Numbers," "Leviticus" and "Deuteronomy."

Beginning his lecture one day the professor said: "Gentlemen, I wish to speak to you about the age of Genesis."

Roars of laughter came from the students.

"Genesis is not so old as you suppose," continued the professor.

More roars—so long continued, indeed, that the worthy man had time to think before he made the next remark. He said timidly, and he hit the mark this time:

"I may not be thinking of the same Genesis as you are!"—Collier's Weekly.

The Problems of Polygamy.

"I'm sorry for Mr. Roberts of Utah," said Mr. Meekton, thoughtfully.

"The idea!" exclaimed his wife.

"I can't help it. The thought of that man having to go back to all those homes and break the news to all those wives, who were expecting to be in Washington society this winter—it's positively tragic!"—Collier's Weekly.

CLARA—Did the newspapers notice your papa at the banquet?

Freddie—Yes.

Clara—Well, mama said she could not see his name in the list.

Freddie—No, but the list ends with "and others." That means papa. They always mention him that way.—Tit-Bits.

DOMESTIC ECONOMY.

Care of Household Linen.

Whether you have much or little household linen, mark each piece with a different style of letter or monogram. It is more elegant than to mark with ink, and there is a style or individuality about linen sheets or pillow cases, napkins and table linens embroidered with an initial.

Large satchets filled with orris root are much used in drawers where the linen is placed, but the sweetest linen after all is kept as our grandmothers used to keep theirs—with rose leaves scattered through it in the drawers. I often am carried back to my happy childhood visits when I encounter again the odor of roses in the linen. I think of the sheets with the breath of sweet springtime in them that grandmother used to send me to get from the linen closets. There may be sentiment in this, but we are all happier and better for a little sentiment in the every-day life duties.

Table linens should be separated from the other wash. All stains should be carefully removed and all little rents mended neatly. They should never be allowed to get so soiled that they will need hard rubbing. Borax should be added to the water in which table linens are washed. Our grandmothers prided themselves on their table linens and they used powdered borax in the water in which all table linens were washed. It whitened and softened them, as it cleans so much quicker. It gives them a soft, pliable texture which adds so much to the handsome napery.

No one can have an elegant table un-

less the tablecloths are laundered properly. A stiff, wiry-looking, yellow tablecloth would spoil the costliest china and silver.

The prettiest way to embroider the initials upon your table linen is to select a lovely letter and draw it yourself (or get it stamped) and work it in the fine French embroidery cotton. You can pad it and make it look as handsome as French embroidery. It pays many times over to have choice table linens.

Lemon Pies.

There are two kinds of lemon pies—those baked in two crusts and those baked in one crust and finished with a meringue. In both cases the filling is a species of custard thickened with cornstarch or flour, or both. If the filling is watery it is not because of the baking, but because the cornstarch or flour has not been properly cooked in the water it is mixed up with before it was put into the crust. If the meringue top of the pie is "watery," it is because it has been baked too rapidly, reducing the whites of the eggs in it to a tough, leathery substance, and melting the sugar into a syrup. We give recipes for making lemon pies of the two kinds mentioned:

To make a lemon meringue pie, mix a half cup of sugar and two liberal tablespoonfuls of cornstarch together, and stir with them the juice of a lemon, adding its grated peel and also two eggs, well beaten. Pour a pint of boiling water over the mixture, beating all the time. Continue to beat it over the fire until the mixture boils and thickens a little. Put it at once into a pieplate lined with pastry, and bake it like a custard pie until it is firm in the center. Let it get thoroughly cold; then beat the whites of three eggs to a stiff froth with three heaping tablespoonfuls of powdered sugar. Spread this meringue roughly, not smoothly, as cooks do sometimes, and set the pie in a cool oven, where in twenty minutes' baking the meringue will be colored an even delicate brown. If it is cooked in this way it will not fall when it is taken from the oven. It is better to serve a meringue pie the moment it is thoroughly cold. Meringues do not keep well.

To make a lemon pie to be baked between crusts of pastry as a mince or apple pie is baked, stir a heaping tablespoonful of flour to a paste, with just enough water to mix it; then stir it into a cup of cold water. Add the grated yellow peel of a lemon and its juice, with a scant cup of sugar. Stir this filling over the fire in a double boiler until it boils. After it has boiled for three or four minutes take it off the fire and let it cool a little, and add one well-beaten egg. Pour this filling into a pieplate, well lined with crust. Cover it with a thin layer of rich pie crust, and bake the pie about forty minutes in a very hot oven.

Confection From Orange Rind.

A most delicious confection is made as follows: Take the orange rinds that are left over from breakfast, cut them into strips, removing carefully the bitter white pith from the inside. Put them into water and boil them until quite tender. Now make a syrup by putting four tablespoonfuls of water to a cup of sugar. Place this over the fire and bring to the cracking point, then put in the orange strips and cook for five minutes. Remove from the stove and leave the rinds in the syrup until it cools; then drain on sieve and roll in granulated sugar. Placed in a dainty box lined with silk paper, this dainty confection is most acceptable.

Prunes as a Remedial Diet.

A saucer of cooked prunes, without cream, eaten every morning a half hour before breakfast, for a few weeks, will relieve the most severe cases of chronic constipation. The same result will be accomplished, perhaps more agreeably, if the prunes are eaten a half hour before retiring, and they will help to give a good night's rest.



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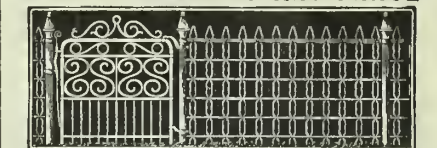
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, May 9, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	65 1/2 @ 65 3/4	67 1/2 @ 67 3/4
Thursday.....	65 1/2 @ 65 3/4	67 1/2 @ 67 3/4
Friday.....	65 1/2 @ 65 3/4	67 1/2 @ 67 3/4
Saturday.....	66 @ 65 3/4	67 1/2 @ 67 3/4
Monday.....	65 1/2 @ 65 3/4	67 1/2 @ 67 3/4
Tuesday.....	66 @ 65 3/4	67 @ 67 3/4

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday.....	5s 9 1/2 d	5s 9 1/2 d
Thursday.....	5s 9 1/2 d	5s 9 d
Friday.....	5s 8 1/2 d	5s 8 1/2 d
Saturday.....	5s 8 1/2 d	5s 8 1/2 d
Monday.....	5s 8 1/2 d	5s 8 1/2 d
Tuesday.....	5s 8 1/2 d	5s 8 1/2 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	— @ —	1 02 1/2 @ 1 02 3/4
Friday.....	— @ —	1 01 1/2 @ 1 02 1/4
Saturday.....	— @ —	1 02 1/2 @ 1 02 3/4
Monday.....	— @ —	1 02 @ 1 01 1/2
Tuesday.....	— @ —	1 02 1/2 @ 1 01 1/2
Wednesday.....	— @ —	1 01 1/2 @ 1 00 3/4

WHEAT.

Business in the local wheat market has continued to drag, and there are no indications at this moment of any radical changes for the better in the near future. Until ships in this port become more plentiful and ocean freight rates easier, there will be little ground to hope for the development of any noteworthy strength in the wheat market, although very pronounced improvement in wheat values abroad would of course have a decided salutary effect. Should wheat values advance abroad, however, to any very material extent, in the present condition of the freight market, ships would in all probability receive the lion's share of the benefit. This has been the experience under similar conditions in previous seasons. While there is not much difference in the supply of vessels here and on the way, as compared with a year ago, the present supply is lighter by about 30,000 tons carrying capacity, while the needs this season are greater. The amount of tonnage on route for Northern ports, Portland and the Sound, however, is considerably greater than last year. The visible supply on the Atlantic side of the United States decreased the past week 2,646,000 bushels, and the world's shipments increased 1,941,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, — @ — c.	
December, 1900, delivery, \$1.02 1/2 @ 1.00 1/2.	
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at — @ — c; December, 1900, \$1.01 1/2 @ 1.00 1/2.	
California Milling.....	95 @ 1 01 1/4
Cal. No. 1 shipping, alongside.....	93 3/4 @ 95
Oregon Valley.....	95 @ 1 00
Walla Walla Blue Stem.....	95 @ 1 00
Walla Walla Club.....	85 @ 1 00
Off qualities wheat.....	82 1/2 @ 92 1/4

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	6s 3d @ 6s 5d	6s 3d @ 6s 3 1/2 d
Freight rates.....	25 @ — s	40 @ — s
Local market.....	\$1 06 1/4 @ 1 08 1/4	93 3/4 @ 97 1/2 c

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

A quiet market is being experienced and a weak tone prevails. Local millers are having control of a much larger proportion of the trade than ordinarily, owing to the product of some outside districts contributing to this center costing now relatively higher figures than the home article. Quotable values remain at the range last noted.

Superfine, lower grades.....	32 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

Trade in this cereal has been slow since last review, both on local account and for export, and the market no more favorable to the selling interest than previously noted. Showery weather in some sec-

tions during the past week has improved the crop prospects somewhat, and this has aided in keeping values at a low range. Should there be any activity in the future, prices would likely speedily harden to at least a moderate degree, but there is nothing to warrant anticipating during the next month or two any such activity as would be necessary to impart decided strength to the market.

Feed, No. 1 to choice.....	72 1/2 @ 76 1/4
Feed, fair to good.....	67 1/2 @ 72 1/4
Brewing, No. 1 to choice.....	85 @ 95
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

While there has been a fair movement in oats the past week, especially considering the quiet condition of the market for most other cereals, prices have not fluctuated to any noteworthy degree, remaining virtually in same position as last quoted. Colored oats continue to receive the bulk of attention, for the simple reason that they are cheaper than white.

White Oats, fancy feed.....	1 23 1/4 @ 1 25
White, good to choice.....	1 12 1/2 @ 1 20
White, poor to fair.....	1 05 @ 1 10
Gray, common to choice.....	1 07 1/2 @ 1 15
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	95 @ 1 07 1/2
Red.....	95 @ 1 17 1/2

CORN.

Stocks of Yellow are of very light volume, and for choice dry the market is decidedly firm at current rates. There is scarcely any Large Yellow here outside the hands of millers, and one milling firm controls a large part of the Small Yellow, not only in this center but in the entire State. There is no scarcity of White corn and market for this variety lacks strength.

Large White, good to choice.....	1 05 @ 1 10
Large Yellow.....	1 17 1/2 @ 1 20
Small Yellow.....	1 50 @ 1 60
Eastern, in bulk (carload lots).....	1 10 @ 1 12 1/2

RYE.

Values remain steady. There is not much offering, neither is there great inquiry at last quoted advance.

Good to choice, new.....	97 1/2 @ 1 02 1/2
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BUCKWHEAT.

Market is almost bare, and with very little required at this time of year, there is naturally next to nothing upon which to base quotations.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

Prospects for coming crop are a little more favorable than they were a few weeks ago, beyond which there is no particularly noteworthy or new feature to record. While there is a slightly easier undertone to the market, quotable values are without special change, and it is not likely that any pronounced fluctuations will be experienced during the balance of the season. There is a fair jobbing trade in progress, all varieties represented receiving some attention.

Pea, fair to good, 100 lbs.....	3 35 @ 3 50
Small White, good to choice.....	3 35 @ 3 50
Lady Washington.....	3 15 @ 3 25
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 70 @ 2 90
Bayos, good to choice.....	3 15 @ 3 35
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 25 @ 5 35
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

DRIED PEAS.

Business in this line is practically at a standstill, with chances of so continuing until next crop begins to come forward. Quotable values are nominally as before.

Green Peas, California.....	2 20 @ 2 35
Niles Peas.....	2 00 @ 2 25

WOOL.

While no great quantity of wool has yet changed hands this season in the San Francisco market, there are indications that there will be a fair amount of trading at an early date, perhaps at figures not so good as anticipated early in the season by those optimistically inclined, but, through competition of local operators, as high prices will probably be realized as will be justified by conditions in Eastern manufacturing centers. Current quotations are based mainly on asking rates.

SPRING.

Humboldt and Mendocino.....	20 @ 22
Northern, free.....	16 @ 17 1/4
Northern, defective.....	13 @ 16
Middle Counties, free.....	15 @ 17
Middle Counties, defective.....	13 @ 15
Southern Mountain, 12 mos.....	11 @ 13
Southern Mountain, free, 7 mos.....	12 @ 15
Southern Mountain, defective, 7 mos.....	10 @ 12
Nevada, as to condition.....	16 @ 18

HOPS.

The same inactivity previously noted

continues to be experienced in the local hop market, with little likelihood of a different condition being developed during the summer months, or until the close of the current season. Wholesale market is lifeless. Choice to fancy would bring an advance on extreme figure below quoted, but such stock is not obtainable in noteworthy quantity at present.

Good to choice, 1899 crop.....	6 @ 9
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HAY AND STRAW.

There is no improvement to note in the hay market. Stocks of old are far from exhausted and new is beginning to come forward, although the latter is hardly yet quotable in a regular way. New will soon be in liberal receipt, however, and will likely sell at figures close to those lately current on old. New Alfalfa came to hand, the first offerings bringing \$5 per ton. Straw market is ruling easy at quotably unchanged figures.

Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 00 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 00 @ 7 00
Stock.....	4 50 @ 5 50
Compressed.....	6 50 @ 9 50
Straw, 1/2 bale.....	30 @ 40

MILLSTUFFS.

Market for Bran continued in much the same groove as preceding week. Arrivals were mainly from Oregon, but offerings proved ample for current needs. Middlings and Shorts were quotably unchanged, with stocks of small volume and inquiry light. Rolled Barley was held at much the same rates as last quoted. Market for Milled Corn continued firm.

Bran, 1/2 ton.....	11 50 @ 12 50
Middlings.....	15 00 @ 18 00
Shorts, Oregon.....	13 00 @ 15 00
Barley, Rolled.....	16 00 @ 16 50
Cornmeal.....	24 50 @ 25 00
Cracked Corn.....	25 00 @ 26 00

SEEDS.

In the line of seeds quoted under this heading, there is so little doing that there is at the moment virtually no opportunity to test values. Former quotations are continued, representing nominal prices. Stocks of most kinds are of insignificant volume.

	Per ctt.
Mustard, Trieste.....	3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25
	Per lb.
Canary.....	3 1/4 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/4
Timothy.....	4 @ 4 1/4
Alfalfa, Utah.....	8 1/2 @ 9 1/4

BAGS AND BAGGING.

Dealers continue to quote an inactive market for Grain Bags and no changes in prices. That there will be much interior buying in this line prior to harvest does not now appear likely. That there will be an effort to force prices up at harvest time is altogether probable. In other Bags and Bagging there is little doing, quotations continuing as before.

Calcutta Grain Bags, huyer June-July.....	6 1/4 @ —
Calcutta Grain Bags, spot.....	6 1/4 @ —
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ —
State Prison Bags, 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/4 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/4
Fruit Sacks, cotton.....	6 1/4 @ 7 1/4

HIDES, PELTS AND TALLOW.

There is a fair demand for Dry Hides for shipment East, and market for same is fairly firm at rates quoted. With this exception, the market for all goods listed under this heading is slow and lacks firmness.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 @ 9	
Medium Steers, 48 to 56 lbs.....	9 @ 8	
Light Steers, under 48 lbs.....	9 @ 8	
Heavy Cow Hides, over 50 lbs.....	9 @ 8	
Light Cow Hides, under 50 lbs.....	9 @ 8	
Wet Salted Klp.....	9 @ 8	
Wet Salted Veal.....	9 @ 8	
Wet Salted Calf.....	10 @ 9	
Dry Hides.....	18 @ 15	
Dry Kip and Veal, 11 to 16 lbs.....	17 @ 13	
Dry Calf, under 4 lbs.....	20 @ 16	
Salted Horse Hides, large.....	2 50 @ —	
Salted Horse Hides, medium.....	2 00 @ —	
Salted Horse Hides, small.....	1 00 @ —	
Dry Horse Hides, large.....	2 00 @ —	
Dry Horse Hides, small.....	75 @ 1 00	
Dry Colts' Hides.....	50 @ 75	
Pelts, long wool, 1/2 skin.....	1 00 @ 1 25	
Pelts, medium, 1/2 skin.....	70 @ 90	
Pelts, short wool, 1/2 skin.....	35 @ 60	
Pelts, shealing, 1/2 skin.....	20 @ 35	
Deer Skins, best summer.....	27 1/2 @ 30	
Deer Skins, good medium.....	20 @ 22 1/2	
Deer Skins, thin winter.....	— @ 10	
Elk Hides.....	10 @ 12	
Tallow, good quality.....	5 @ 5 1/4	

Tallow, No. 2.....	4 1/4 @ 4 1/2
Goat Skins, perfect.....	30 @ 37 1/2
Goat Skins, damaged.....	10 @ 20
Kid Skins.....	5 @ 10

HONEY.

Small quantities of new crop have been landed on the market, but not enough has been yet done in the same to give any clearly defined idea of values for new product. That prices for new will vary much from the figures lately current on 1899 honey, however, does not seem likely. Quotations below noted are based mainly on jobbing figures for old stock.

Extracted, White Liquid.....	7 1/4 @ 8
Extracted, Light Amber.....	7 @ 7 1/4
Extracted, Amber.....	5 @ 5 1/4
White Comb, 1 lb frames.....	11 1/4 @ 12 1/4
Amber Comb.....	8 @ 10

BEE SWAX.

Market is not burdened with offerings, nor is it apt to be during the season just opening. Values are being well sustained.

Good to choice, light, 1 lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Beef was sold at generally unchanged rates, with market easy in tone. Mutton was in ample supply for current needs, market inclining in favor of consumers. Veal was in light receipt and market rather firm. Lamb was in sufficient supply for current needs and values were barely steady. Hogs were in better supply and easier, but brought generally higher prices than packers were willing to pay.

Beef, first quality, dressed, net 1/2 lb.....	6 @ 6 1/4
Beef, second quality.....	6 @ —
Beef, third quality.....	5 @ 5 1/4
Mutton—ewes, 6 @ 7c; wethers.....	6 @ 7 1/4
Hogs, hard grain fed, medium.....	5 1/2 @ 6
Hogs, small, fat.....	5 1/2 @ 6
Hogs, large, hard.....	5 1/2 @ 5 1/4
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ 5 1/4
Hogs, country dressed.....	6 @ 6 1/4
Veal, small, 1/2 lb.....	7 @ 9 1/4
Veal, large, 1/2 lb.....	7 @ 8
Lamb, spring, 1/2 lb.....	8 @ 9

POULTRY.

There was no surfeit of large and fat chickens and such sold as a rule to good advantage. Small Broilers and poor old fowls met with a slow and dragging market. Turkeys, Ducks and Geese went at slightly reduced rates, with inquiry light. Pigeons were in good request at figures quoted.

Turkeys, dressed, 1/2 lb.....	— @ —
Turkeys, live hens, 1/2 lb.....	12 @ 13
Turkeys, live gobblers, 1/2 lb.....	11 @ 12
Hens, California, 1/2 dozen.....	4 00 @ 5 00
Roosters, old.....	4 25 @ 4 50
Roosters, young (full-grown).....	6 00 @ 7 00
Fryers.....	4 50 @ 5 00
Broilers, large.....	3 50 @ 4 00
Broilers, small.....	2 00 @ 3 00
Ducks, old, 1/2 dozen.....	4 50 @ 5 00
Ducks, young, 1/2 dozen.....	5 00 @ 6 00
Geese, 1/2 pair.....	1 50 @ 1 75
Goslings, 1/2 pair.....	1 50 @ 2 00
Pigeons, old, 1/2 dozen.....	1 75 @ 2 00
Pigeons, young.....	1 75 @ 2 00

BUTTER.

While demand was not particularly brisk at full current rates, values were fairly well maintained. That prices for best qualities will recede materially from present levels is not considered probable.

Creamery, extras, 1/2 lb.....	18 @ —
Creamery, firsts.....	17 1/4 @ —
Creamery, seconds.....	17 @ —
Dairy, select.....	17 @ —
Dairy, seconds.....	16 @ 16 1/4
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 15
Creamery in tubs.....	18 @ 19
Pickled Roll.....	— @ —
Firkin, California, whole to select.....	18 @ 19
Firkin, common to fair.....	16 @ 17

CHEESE.

Market shows fully as healthy tone as previously noted, with nothing to warrant anticipating the development of weakness in the near future. For some favorite marks going to special trade higher rates than quoted are realized.

California, fancy flat, new.....	8 @ 8 1/4
California, good to choice.....	7 1/4 @ 8
California, fair to good.....	7 @ 7 1/4
California, Cheddar.....	— @ —
California, "Young Americas".....	7 1/4 @ 9

EGGS.

Demand for domestic or local product, especially high-priced ranch and henry stock, has not been brisk. While the market was hardly quotably lower, it could not be termed firm at full current rates. Retailers were running largely on Eastern and store-gathered eggs. Eastern markets were rather firm, but importers were able to sell just a little under the figures generally asked for best domestic.

California, select, large, white and fresh.....	16 1/2 @ 17
California, select, irregular color & size.....	15 @ 16
California, good to choice store.....	14 1/2 @ 15
Eastern, as to section and grading.....	15 @ 16
Eastern, cold storage.....	— @ —

VEGETABLES.

This week's Australian ste

about 900 crates Yellow Onions. It is not likely they will be sold to as good advantage as previous consignment, the season being too far advanced. New Red are now arriving rather freely and are showing fair average quality. Choice Peas were in lighter receipt and higher. Asparagus tended in favor of buyers. Changes of values of other vegetables in season were not marked.

Asparagus, $\frac{1}{2}$ box.....	75	@ 2 00
Beans, String, $\frac{1}{2}$ lb.....	4	@ 5
Beans, Wax, $\frac{1}{2}$ lb.....	5	@ 6
Cabbage, choice garden, $\frac{1}{2}$ 100.....	40	@ —
Cauliflower, $\frac{1}{2}$ dozen.....	50	@ —
Cucumbers, $\frac{1}{2}$ box.....	2 00	@ 2 50
Egg Plant, $\frac{1}{2}$ lb.....	8	@ 10
Garlic, $\frac{1}{2}$ lb.....	—	@ —
Onions, Red, Cal., good to choice.....	75	@ 1 00
Onions, Oregon, $\frac{1}{2}$ cental.....	—	@ —
Peas, Sweet, garden, $\frac{1}{2}$ lb.....	2 1/2	@ 3
Peas, Green, $\frac{1}{2}$ sack.....	75	@ 1 25
Peppers, Green Chile, $\frac{1}{2}$ lb.....	6	@ 10
Peppers, Bell, $\frac{1}{2}$ lb.....	—	@ —
Rhubarb, $\frac{1}{2}$ box.....	35	@ 90
Squash, Summer, $\frac{1}{2}$ box.....	1 25	@ 1 50
Tomatoes, Southern, $\frac{1}{2}$ box.....	1 25	@ 1 75
Tomatoes, Bay, $\frac{1}{2}$ box.....	—	@ —

POTATOES.

Most of the Old Potatoes coming forward the past week were Burbank Seedlings from Oregon, and these were not in heavy supply. There was a moderate demand for immediate use and values were fairly steady. New Potatoes were in somewhat better supply than previous week, with the quality improving and the general drift of values to lower levels.

Burbanks, River, $\frac{1}{2}$ cental.....	50	@ 80
Burbanks, Bay counties, $\frac{1}{2}$ cental.....	50	@ 85
Burbanks, Humboldt.....	—	@ —
Burbanks, Oregon.....	75	@ 1 00
River Reds.....	75	@ 85
Early Rose.....	—	@ —
Garnet Chile.....	—	@ —
New Potatoes, $\frac{1}{2}$ cental.....	1 00	@ 1 50
Sweet, River, $\frac{1}{2}$ cental.....	—	@ —
Sweet, Merced.....	—	@ —

The Fruit Market.

FRESH FRUITS.

While there has been an increase in varieties of early Summer fruits on market the past week, Cherries and Strawberries made decidedly the most prominent display. Cherries sold at reduced figures, but for choice to select the market was by no means weak. Strawberries sold close to figures last quoted; the quality of some arrivals was quite poor. Gooseberries arrived in quotable quantity, mostly of the common variety. Blackberries from Newcastle, the first of the season, brought \$1.75 per crate. The few Raspberries received went mainly within range of \$1.50@2.00 per crate and \$1.00@1.50 per drawer. Red Currants from Vacaville were held mainly at 75c per drawer. Green Almonds were quoted at 50c@51c per box, with demand light.

Apples, fancy, 4-tier box.....	2 50	@ 3 00
Apples, good to choice, $\frac{1}{2}$ 50-lb box.....	1 50	@ 2 25
Apples, common to fair, $\frac{1}{2}$ 50-lb box.....	—	@ —
Cherries, Black Tartarian, $\frac{1}{2}$ box.....	50	@ 1 00
Cherries, White and Red, $\frac{1}{2}$ box.....	40	@ 60
Gooseberries, common, $\frac{1}{2}$ box.....	25	@ 35
Gooseberries, English, $\frac{1}{2}$ lb.....	6	@ 8
Raspberries, $\frac{1}{2}$ chest.....	12 00	@ 15 00
Raspberries, $\frac{1}{2}$ drawer.....	1 00	@ 1 50
Blackberries, $\frac{1}{2}$ crate.....	1 25	@ 1 75
Currants, Red, $\frac{1}{2}$ chest.....	10 00	@ 14 00
Strawberries, Longworth, $\frac{1}{2}$ chest.....	5 00	@ 9 00
Strawberries, Large, $\frac{1}{2}$ chest.....	4 00	@ 6 00

DRIED FRUITS.

The market for cured and evaporated fruits has been exceedingly quiet since issue of last report, with absence of firmness still more prominent than a week ago. As the new season is near at hand, it is natural that the demand for old stock should be light, and that values for same should be depressed. While weakness is most pronounced on such varieties as are in most liberal supply, values are not being well maintained on such kinds as are only in scanty stock. Apricots are notably lower, although there is no large quantity of 1899 crop now offering. There is considerable talk regarding future deliveries of new crop 'cots, but beyond some contracting for Germany, there is no evidence of anything of consequence having been done. New Apricots are quoted at 7@7 1/2c for good to choice Northern in sacks, for forward delivery at common shipping points. Some transfers are claimed to have been made at above figures for August delivery. Apples are in rather heavy stock for this time of year, and are being offered at reduced figures, with no noteworthy movement at the decline. Peaches are moving in moderate fashion at a further reduction in values, the business doing being largely the result of selling pressure and making prices sufficiently low to tempt buyers, with a view of cleaning up present holdings before new come upon the market. Transactions in Pears and Plums are only of a small jobbing character, with quotable values unchanged and stocks of very limited volume. There are fair supplies of Prunes

still reported at interior points, mainly in the Santa Clara valley. Supplies of Prunes in this center are light, and small sizes are unobtainable in noteworthy quantity, but despite the very limited spot offerings, there is no hardening of values. The Government has been lately a fairly liberal buyer of dried fruit, and is now soliciting bids for considerable quantities of several varieties, but the tone of the market gives no evidence of improvement in consequence of this purchasing.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, $\frac{1}{2}$ lb.....	10	@ 11
Apricots, Royal, fancy.....	11	@ 12
Apricots, Moorpark.....	13	@ 15
Apples, in 50-lb boxes, rings, pressed, fancy.....	6	@ 6 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.....	5	@ 5 1/2
Figs, White, fancy pressed.....	5 1/2	@ 5 1/2
Peaches, unpeeled, good to choice.....	4 1/2	@ 5
Peaches, unpeeled, fancy.....	6 1/2	@ 7 1/2
Peaches, peeled, in boxes.....	12	@ 15
Pears, unpeeled Bartlett's, balved, fancy.....	9	@ 9 1/2
Pears, halved, unpeeled Bartlett's.....	6 1/2	@ 7 1/2
Pears, quartered, unpeeled Bartlett's.....	6 1/2	@ 7 1/2
Plums, Black, pitted.....	6 1/2	@ 7 1/2
Plums, White and Red.....	7	@ 8
Prunes, in sacks, 40—50s.....	3 1/2	@ 4
50—60s.....	3 1/2	@ 3 1/2
60—70s.....	3	@ 3 1/2
70—80s.....	2 1/2	@ 3
Prunes in boxes, $\frac{1}{2}$ c higher for 25-lb boxes, $\frac{1}{2}$ c higher for 50-lb boxes.	—	@ —
4 sizes Santa Claras and equal.....	—	@ —
4 sizes San Joaquin and Northern.....	—	@ —
Prunes, Silver.....	4	@ 6

COMMON SUN-DRIED.

Apples, sliced.....	3	@ 4
Apples, quartered.....	3 1/2	@ 4 1/2
Figs, Black.....	2	@ 3
Figs, White.....	3	@ 3 1/2
Peaches, unpeeled.....	3	@ 4

RAISINS.

There is very little doing in this line at present and market shows unsettled condition. While there is no official announcement of any changes in quotations, there have been sales reported of outside holdings of loose Muscatels at 1 1/2@2c under card rates. Indications do not appear favorable for there being any special stability to values for supplies of 1899 Raisins now remaining unplaced. It is claimed there are from 175 to 200 carloads on hand, mostly held by packers. Only at very low and favorable rates can dealers be expected to stock up with Raisins at this time of year.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, $\frac{1}{2}$ box.....	1 60	@ —
do do 2-crown, $\frac{1}{2}$ box.....	1 50	@ —
Valencia Layers, $\frac{1}{2}$ 20-lb box.....	80	@ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6 1/2	@ —
Loose Muscatel, seedless.....	5	@ —
Pacifics.—2-crown loose Muscatel, 5 1/2c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c.	—	@ —
Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.	—	@ —

(Above prices for loose raisins are for 50-lb. boxes.)
 Thompson Seedless.—Bleached fancy, $\frac{1}{2}$ lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.
 Sultanas.—Bleached fancy, $\frac{1}{2}$ lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.
 Loose Valencias.—Fancy, $\frac{1}{2}$ lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.
 Valencia Clusters.—Fancy, $\frac{1}{2}$ lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Oranges have been in lighter supply than for several weeks preceding, but for the ordinary run of offerings prices showed no improvement. Choice to select Navels made a slim showing, and for this description tolerably firm figures were realized. Lemons were offered at fully as easy rates as last quoted, with demand only moderate, and offerings considerably in excess of immediate necessities. Limes were obtainable at generally unchanged figures, with supplies of fair volume.

Oranges—Navels, fancy $\frac{1}{2}$ box.....	2 50	@ 3 00
Navels, good to choice.....	1 50	@ 2 00
Navels, common to fair.....	1 00	@ 1 50
St. Michaels.....	1 00	@ 2 00
Mediterranean Sweet.....	1 00	@ 2 00
California Seedlings.....	65	@ 1 75
Lemons—California, select, $\frac{1}{2}$ box.....	2 25	@ 2 50
California, good to choice.....	1 50	@ 2 00
California, common to fair.....	1 00	@ 1 25
Limes—Mexican, $\frac{1}{2}$ box.....	4 00	@ 4 50
California, small box.....	50	@ 1 00

NUTS.

This market presents no new or noteworthy features. There is not much inquiry at present, but stocks of most kinds are of such insignificant volume that it would be impossible to accommodate any special demand. In the absence of any business of consequence in Almonds or Walnuts, former quotations are continued, but they represent only nominal values at this date.

California Almonds, shelled.....	14	@ 17
California Almonds, paper shell, $\frac{1}{2}$ lb.....	10	@ 12
California Almonds, soft shell.....	8	@ 9
California Almonds, hard shell.....	4	@ 5
Walnuts, White, soft shell.....	9	@ 10
Walnuts, White, California, standard.....	7	@ 8
Chestnuts, California Italian.....	8	@ 10
Peanuts, California, fair to prime.....	5	@ 6
Peanuts, Eastern, hand-picked.....	6	@ 6 1/2
Pine Nuts.....	5	@ 6

WINE.

The situation remains practically as before, so far as the wholesale market is concerned. The leading dealers appear indifferent, claiming they have all the wine they can conveniently carry. At their ideas of values, however, 14@16c per gallon for new dry wines, San Francisco delivery, they would doubtless promptly take the entire vintage of 1899, if they could secure same at the prices quoted. To sell on present market, above figures have to be accepted, unless it be in a small way for a superior article going to special trade.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{2}$ sacks.....	120,627	5,497,860
Wheat, centals.....	88,136	5,878,050
Barley, centals.....	100,272	4,791,773
Oats, centals.....	6,020	712,269
Corn, centals.....	2,460	123,506
Rye, centals.....	1,320	96,452
Beans, sacks.....	3,837	352,634
Potatoes, sacks.....	18,104	1,109,277
Onions, sacks.....	2,525	144,404
Hay, tons.....	2,834	138,560
Wool, hales.....	710	48,196
Hops, hales.....	186	10,054

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{2}$ sacks.....	99,016	3,751,322
Wheat, centals.....	61,859	5,236,735
Barley, centals.....	76,181	3,784,229
Oats, centals.....	408	43,414
Corn, centals.....	494	18,077
Beans, sacks.....	885	25,117
Hay, hales.....	2,505	127,657
Wool, pounds.....	—	4,324,433
Hops, pounds.....	4,291	1,009,526
Honey, cases.....	43	3,526
Potatoes, packages.....	1,243	69,473

California Dried Fruit at New York.

NEW YORK, May 9.—Evaporated apples, common, 4 1/2@5c; prime wire tray, 5 1/2@6c; choice, 6 1/2@7c; fancy, 7 1/2@8c.
 California dried fruits steady, with demand moderate at current rates.
 Prunes, 3 1/2@7c.
 Apricots, Royal, 13@15c; Moorpark, 15@18c.
 Peaches, unpeeled, 7 1/2@9c; peeled, 18@22c.

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By PROF. E. J. WICKSON.

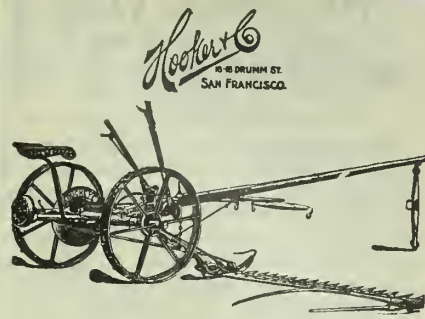
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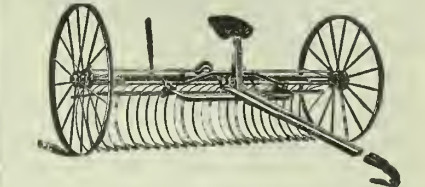
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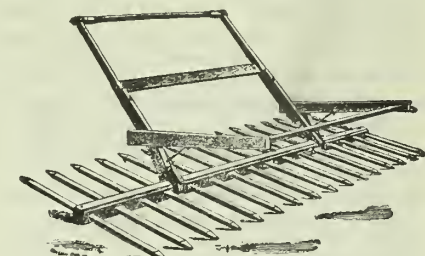
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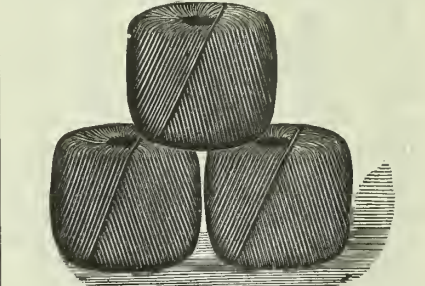
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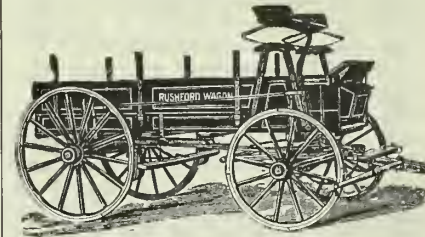
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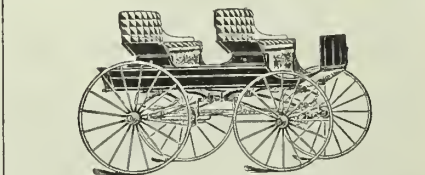
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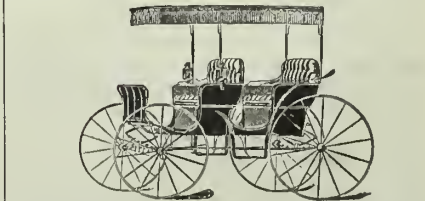
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THE STOCK YARD.

Some General Facts About Belgian Hares.

By JOHN S. MEYERS of Los Angeles.

The thought that usually floats through the mind of the uninformed is that the Belgian hares are some new-fangled "cottontail" or jackrabbit, but a little acquaintance soon dispels this idea. The orchardist is liable to think that his neighbor has gone into partnership with "Brer Rabbit;" that his young trees must help satisfy their keen appetites; but he soon finds he is mistaken, for they are more carefully housed and restrained than any other food-producing animal.

As to ORIGIN.—Perhaps you will ask where did the Belgian hare originate. Opinions differ, but the best authorities agree that Belgian hare rabbits originated in Belgium some time early in the present century. They were there known as "leporines," but that name is now obsolete. In 1850 or thereabouts a number were sent to English fanciers, who set about to produce an animal that would resemble the English wild hare, with all its graceful outlines, beautiful color and size. They weighed well the different types of rabbit which were considered most likely to produce the desired result. One was selected for its shape, another for color, the next for size and weight and so on until finally they succeeded in producing an animal with the multiplying qualities of the rabbit and with the color and graceful outlines of their ideal—the English wild hare.

Many persons believe the present type of Belgian wild hare can be found in a wild state in some parts of Europe. While there is a similarity in some respects, their habits and characteristics are entirely different. The wild hare is not given to burrowing and only breeds twice a year, the young (never more than two) being born well clothed with fur and their eyes open. The Belgian delights in subterranean exploration, and will, if permitted, breed five or more times a year, bringing forth from six to twelve or more helpless young at a litter, their eyes not open for nine or ten days, and in every way showing their common rabbit tendency.

About 1882, English fanciers, who had become interested in the advancement and further development, drew up a standard which was universally adopted, but has undergone subsequent revisions until now it seems that most of the fine points are quite well defined, though the progress of the "fancy" side of the business may result in some slight changes.

Less than a decade ago they were brought across the water into the United States and a few people reared them as pets. The late Edward M. Hughes of New York State was an early fancier, and did much to call attention to the value of this little animal. He exhibited at the World's Fair. Then scattering breeders began to appear over the country, but attracted little attention.

In the year 1896 the fanciers of America took to the breeding of Belgian hares in good earnest, and many of the choicest specimens of England that money could buy were imported. Subsequently, the National Belgian Hare Club was organized for the purpose of promoting the industry. Branches of the national and local clubs now exist in many localities, especially in California. As soon as there are a few breeders in a locality, they find it advantageous to organize.

SIZE AND COLOR.—The weight of a mature thoroughbred Belgian is about eight pounds, but sometimes exceeds this by two or three pounds, when they are called "heavyweights." The color is rather difficult to describe. The foundation of the color is a reddish tan, or "Rufus red," which shows clearest on the shoulders and top of the neck. This takes a darker hue over the sides and haunches. Each hair, on portions of the animal, is tipped with black, called ticking. This gives a mottled or wavy appearance which is highly prized and considered a sign of pure blood. The haunches are of a grayish-brown

shade. In the best specimens this produces a distinct brownish cast, and is also well marked with a wavy ticking. The head is graceful and is carried up well. The forehead is flat and the eyes are prominent. They are usually of a dark brown color, full of intelligence and animation. The ears should be about 5 inches long, leaning slightly backward, close together, firmly carried. An edging of black, called lacing, extends over the tips of the ears and well down the edges. The more clearly this is defined the higher the score by the standard, as this is prominent in the wild English hare.

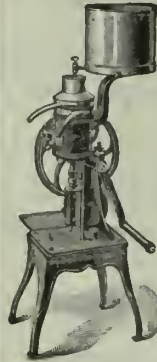
As a FOOD PRODUCT.—Hare meat is clean, wholesome and cheap, and, besides, you know what you are eating when you raise it yourself. There is less waste than any other animal and a good doe will produce more pounds of meat than any other meat producer. A good doe will bring about sixty young a year, which, at the age of six months, will average six pounds each, or about 360 pounds of meat, of better quality than beef, pork or poultry. They are fit for the table at eight to ten weeks old, and at all seasons a hare is never tough if properly cooked. They are not difficult to raise and can be kept in a small space. I know of no better way to solve the problem of a cheap and abundant meat supply than by raising Belgian hares for your own table. As an article of diet the hare has advantages as yet slightly understood in this country. The flavor of the meat is delicious—far finer than that of the best poultry obtainable here. All of the flesh is eatable, so that there is absolutely no waste after the animal has been properly dressed. From a dietetic point of view the flesh of the hare is invaluable. It lacks the heavy, oily substances found in ducks, chickens and turkeys. The flesh, therefore, while very nourishing, produces no inflammation, and may be taken with relish and profit by any invalid. It has none of the strong, gamy flavor found in the wild rabbit, and is, therefore, acceptable to the weakest stomach.

The Belgian hare will dress a pound for every month of its age up to six or seven months. Where they are raised solely for meat they are usually marketed at three months of age. Some, however, claim that the fifth month is the most profitable age for market.

WHAT WILL THEY EAT?—They will eat almost anything that a horse or sheep will eat. They may be given a handful of oats or a little bran, perhaps a carrot and a little alfalfa, oat or barley hay; in the evening some alfalfa hay, well cured, rolled wheat or rolled barley. Feeding twice a day is sufficient, though sometimes we give them a little green stuff at midday, such as cabbage, lettuce or lawn clippings. We feed green food very sparingly to the young. Morning and evening they are given fresh water. All hay must be clean and sweet. In other localities different hay may of necessity be used. Occasionally a warm mash of oats and bran is relished by them. A doe nursing young may be fed bread and milk. Belgians are a very cleanly animal, and will not eat decayed or spoiled food. Our hares are never gorged, but always given just what they will clean up, and one can almost see them grow. No wet vegetables or wet green stuff of any kind is ever allowed our hares, as colic is liable to result.

How THEY MULTIPLY.—A person starting with one pair six months old, if he breeds and handles them in a scientific manner, will, at the end of thirty days, have a litter of an average of eight. When the young are four weeks old the doe may again be bred, the young to be weaned at six weeks. When the first litter is eight weeks old the next litter arrives. The young from one pair will average fifty per annum. Of course, the does in the first litter will be old enough to breed in six months, and the young bucks may be marketed. Then, breeding the young does when they are of age, and figuring that each litter has four does and four bucks, there can be in the neighborhood of 250 hares raised from one pair in one year.

"ALPHA-DISC" CREAM SEPARATORS



The improved "Alpha" disc or divided milk-strata system is used in the De Laval separators only. Strong patents prevent its use in any other machines. The "disc" system makes the De Laval machines as superior to other separators as such other separators are to setting systems. It reduces necessary speed one-half, reduces size of revolving bowl, saves labor and power, enables simplicity and durability, skimming cold milk, running cream of any desired thickness, and insures absolute thoroughness of separation under practical use conditions, which is not possible with any other separator or creaming system.

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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING APRIL 24, 1900.

648,187.—HOSE COUPLING—J. E. Bright, Los Angeles, Cal.
648,242.—STERILIZER—J. A. Cronkwhite, Los Angeles, Cal.
648,251.—FURNACE—J. Garden, Portland, Or.
648,072.—FEATHER RENOVATOR—A. C. Grube, Pasadena, Cal.
648,283.—GAS GENERATOR—H. P. Nielsen, Alameda, Cal.
648,303.—MUSIC BOX—E. C. Roberts, Phoenix, A. T.
647,992.—BOX MAKING MACHINE—Schank & Hickman, Riverside, Cal.
648,117.—GLOBE—J. S. Stubblefield, Los Angeles, Cal.
648,004.—WINDOW SHADE CUTTER—W. T. Van Dercar, Pasadena, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

MEANS FOR CHARGING LEACHING VATS.—No. 647,678; April 17, 1900. C. W. Merrill, Alameda, Cal. This invention relates to a method of charging ore or tailings to a leaching vat, which process is a step in the treatment of said ore or tailings preliminary to the application of the solvent solution in cyanide, hyposulphite, or other hydrometallurgical processes. It consists of a tank or like inclosure, an inclined chute located above the inclosure and mechanism by which it is revolved about a vertical center, said chute having the bottom and vertical sides connected by concave curved plates, openings made in the bottom of said chute at intervals between the upper and lower end transversely and longitudinally movable gates or valves whereby the positions of the openings may be varied longitudinally or from side to side and the area of discharge regulated.

DOOR CONTROLLER.—No. 647,671; April 17, 1900. M. A. De Lew, of Sacramento, Cal. One-half assigned to W. P. Coleman, of same place. This invention relates to a device which is especially designed to open or close doors of any description, either from points closely adjacent to the door or from a distance. It is especially adapted for the opening of heavy safe, vault, and other doors which are difficult to move, the opening of doors or gates upon railroad trains, steamboats or elevators, and in residences, and for opening and closing street doors from floors above or from points at a distance from the doors, and generally for controlling all means for ingress and egress of a like nature. It consists of a vertically hinged door, a shaft projecting from one end in line with the hinges and having a rocker arm fixed thereto, a cylinder fulcrumed at one end, a piston movable therein and a piston rod connecting with the rocker arm, ports or passages by which liquid under pressure is admitted to opposite ends of the cylinder, pipes connecting said ports with a valve chamber, a valve movable in said chamber having ports therethrough adapted to connect with the supply and discharge passages of the cylinder, a pipe by which liquid under pressure is admitted to one end of the valve chamber, a supplemental valve, controlling ports by which liquid is admitted to and exhausted from one end of the main valve chamber, electrically actuated solenoids and a lever connection between them and the supplemental valve stem whereby the latter is moved to admit liquid to the main valve, and a spring by which both valves are returned to their normal position when the electric circuit is cut off.

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"CLIPPER"
DRILLER

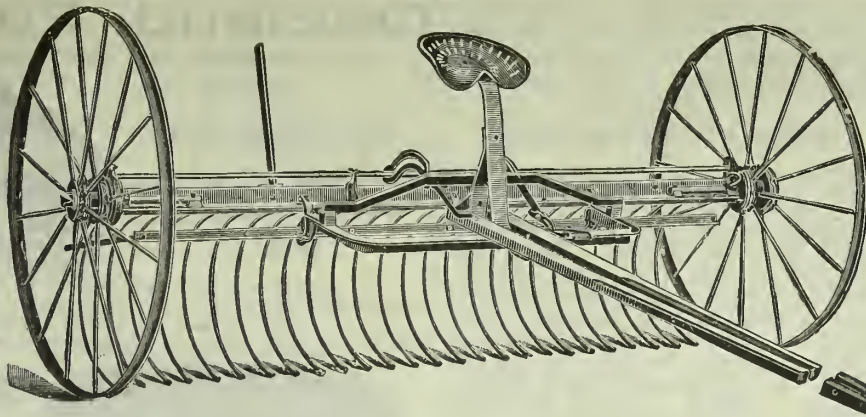
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Wheels are made with extra wide channel steel tire, with the spokes riveted into the malleable hub and riveted into the tire so there is no possible way for the same to become loose, as is the case where the spokes are screwed into the hub and held with a nut, but they can readily be replaced by a blacksmith.

The frame of the rake is made of forged angle steel, and the teeth are connected to the same by metal tooth sections, and connected to the head by bolts in such a manner that the teeth can be put in or taken out one section at a time.

The spring seat is arranged to adjust in height to suit a small boy or man by simply changing two bolts.

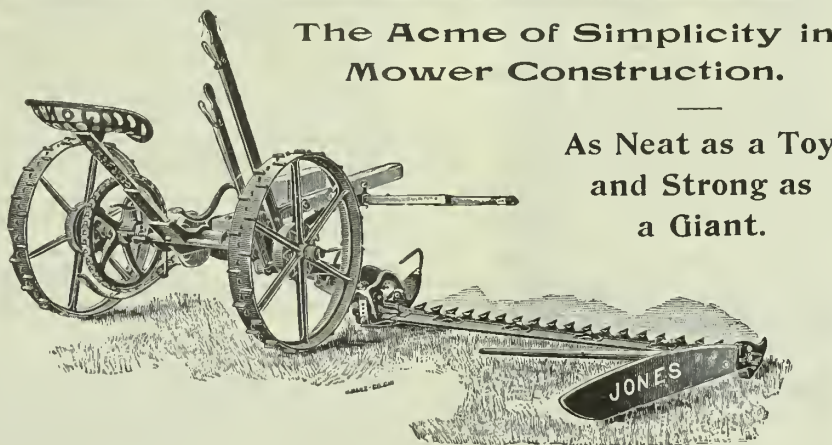
The rake dumps from both wheels by ratchets which are encased at the end of the rake head to prevent the wheels winding with hay.

The dumping device is most simple and durable in its construction. The rake is entirely under the control of the operator when raking on either rough or even ground by the use of our improved foot treadle, and the teeth can be held up by pressing the foot treadle when the rake is dumped, or the teeth can be held down by pressing the foot treadle when the rake is in operation.

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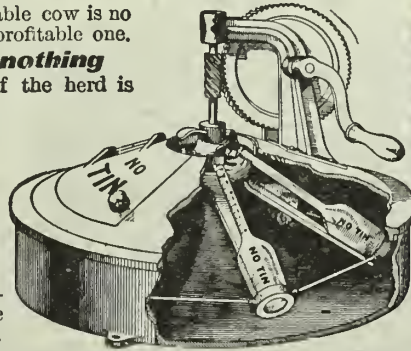
The expense of feeding a profitable cow is no more than the cost of feeding an unprofitable one.
It costs comparatively nothing to find out whether each member of the herd is profitable. The

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Searsburg, Bennington Co. Vt., Jan. 26, '98.
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Yours respectfully, W. L. PRATT.
Such endorsements as the above are a guarantee of merit. Price, \$1; six for \$5. As a liniment for my use it has no equal. Ask your druggist for KENDALL'S SPAVIN CURE, also "A Treatise on the Horse," the book free, or address
DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

Patrons of Husbandry.

Grass Valley Grange.

To THE EDITOR:—We have been so busy with new candidates, Harvest Feasts, presentations and other glorifications such as basket socials and the like, that the secretary has not been able to find time to write and tell the members of the Order, through your paper, of the happenings.

On March 10th a past master's jewel was presented to Worthy Past Master O. L. Twitchell; also a medal, handsomely engraved with a sheaf of wheat, in addition to the inscription, was given to Past Treasurer A. Matteson, who had served our lodge in that capacity for twenty years (lacking only one in that time) faithfully and well. You can imagine the speeches, also the sentiments, that prevailed on that occasion.

Two Harvest Feasts were held during the March quarter; thirteen names were sent in, besides one reinstated. Thirteen being an unlucky number, perhaps accounts for the fact that two of the number failed to appear for initiation.

On April 14th a basket social was held to replenish the Grange treasury. The sisters trim up a basket or box, fill it with lunch for two, insert a card with her name on it and the baskets are sold at auction to the highest bidder, who eats of its contents with the lady whose name is on the card. Much merriment generally ensues at the time of eating and the handsome baskets bring from a dollar to four or five sometimes. It is a good way to make a little money.

The letter of the State secretary of last quarter was very interesting in the PACIFIC RURAL PRESS. It is most time for another. The State lecturer, to say nothing of State Master Worthen, seem to be "all right," too.

Mrs. R. S. TWITCHELL,
Sec'y of Grass Valley Grange.

San Jose Grange.

The San Jose Grange is more flourishing than at any time in its history, as is proved by the increasing number of candidates initiated at each of the weekly meetings. Last Saturday nine candidates were initiated as follows: Mr. and Mrs. W. B. Irish, Mr. and Mrs. C. R. Williams, Mrs. A. M. Hulet, Mrs. Hoag, Mrs. G. M. Smith, Earl Malone and C. M. Allen.

Great interest was manifested in the discussion of the movement to preserve the redwood forests of the Big Basin and Felton grove. The discussion was led by Professor Volney Rattan. The following resolution introduced by him was adopted with an enthusiastic demonstration:

Resolved, That we, the members of the San Jose Grange, earnestly desire that the redwood forests commonly known as the Big Basin and the grove known as the Felton big tree grove be made government reservations.

Final arrangements were made for the big Grange picnic that is to be held

this week Saturday at Blackberry farm. A great spread of delicious eatables will be provided, and there will be fine musical and literary exercises.

Death of a Leading Seed Grower.

SANTA CLARA, May 5.—C. C. Morse, a prominent resident of this place and one of the largest seed growers in the world, died this afternoon. Two years ago while he was in the East on business connected with his seed industry he was stricken with apoplexy. The shock was a very severe one, and was followed shortly after by a lighter shock. He appeared to be growing stronger until ten or twelve days ago, when he received another shock and lingered until this afternoon, when he expired, surrounded by his family.

Charles Copeland Morse was a native of Thomaston, Warren county, Maine, and he was in his fifty-eight year. In 1862 he arrived in California and after visiting in numerous sections he located here, and has been prominently identified with the progress of the valley ever since. In 1878, he associated himself with A. L. Kellogg in the seed business by purchasing the Wilson seed ranch, which was located on the San Francisco road. After a few years Mr. Kellogg retired and the business was conducted afterwards with great success by Mr. Morse. His seeds were shipped to all parts of the world, and by his excellent management he leaves a large estate.

To Study the Grazing Question.

Mr. Gifford Pinchot, forester of the Department of Agriculture, and Mr. F. V. Coville, botanist of the same department, will leave Washington for the West about May 15 to make a personal investigation of the problem of grazing in the forest reserves. The restriction of sheep grazing in these areas has raised a storm of protest from wool growers, and public feeling in the West has become divided and intense. A plan for an exhaustive investigation by the Government was published a few weeks ago, but the tour of these officials will be the first actual work in the field.

They will be met at Holbrook, Arizona, by a committee consisting of A. E. Potter of that city, who is secretary of the Arizona Wool Growers' Association, and J. E. Bark of Phoenix, who represents the cattle and irrigation interests. They will spend three weeks in the Black Mesa reserve and then visit others in Arizona. The examination will be extended to other Western reserves later in the summer, so we shall see them again in California.

TOO MUCH FAT.

Anyone who has suffered from the deformity of too much fat, knows how to sympathize with the wife of a prominent Congressman at Washington who had to give up her social leadership on account of her excessive corpulence. Like a drowning man who grasps at a straw, she tried everything she heard of or could think of and yet continued to get fat. Finally, the treatment of a celebrated German lady specialist, without inconvenience or detriment to her health, reduced her weight to its normal proportions.

Any woman or man who is suffering as she was can accomplish the same results or check the tendency to obesity. There is no starvation, no violent exercise, you can take the treatment unknown to your friends and all the medicines you may need can be got at any drug store. If you write to Mrs. Eleanor Kirby, American Tract Society Building, N. Y., and enclose the small fee of one dollar, she will tell you all about the treatment and what to do. There is no other charge and she has no medicines to sell. If the treatment is not practical and satisfactory the fee will be returned.



JUST AS NATURAL as the old hen and a good deal more reliable. Doesn't break the eggs or make the chicks lousy. Doesn't stay off the nest and allow the eggs to chill but hatches every egg that can be hatched.
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HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 5-yr., and 2-yr.-old classes, except 1st on 2-yr.-old in 1898. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

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STANDARD-BRED PEDIGREED BELGIANS. Fine Does, bred or unbred. Youngsters from best strains, all ages. Booklet free. Britain Rabbitry, Watsonville, Cal.

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BERKSHIRE, POLAND-CHINA & DUDOC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

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Wire Cloth, Prune Dippers, Graders, Etc.

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WHEELS.....28 and 31 inches high.
TIRES.....4 and 5 in. wide, 1/2 in. thick.
AXLES.....1 1/2 inch, solid steel.
BOLSTERS AND AXLE STOCKS...White oak.
CAPACITY.....Guaranteed 5000 lbs.

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LOOKING FOR BELGIANS?

Real Showy, Handsome Creatures. Prize Winners from Prize Winners.

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Prince Britulu, Chief Kitchener, Red Ranger, and other choice bucks at stud.

PAJARO VALLEY POULTRY YARDS, G. H. LELAND, Watsonville, Cal. Drawer D.

Choice Eggs from Thoroughbred Stock—Buff, White and Barred Plymouth Rocks; Buff and White Leghorns; Buff Cochins.

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THE VETERINARIAN.

Answers by Dr. Creely.

THE HEAVES.

TO THE EDITOR:—I bought a team of horses 26 miles from here; caught them up off the grass and drove them home. The next day one of them had the heaves very bad and continued so for more than a week. Is it possible that the horse contracted the disease from that drive and in one night? What is the cause and symptoms of that disease? Is such a horse of any value? Can it be cured?—E. B. ANDERSON, Walnut Creek.

Heaves could be contracted from one drive, providing judgment was not used, or if the horse was too bulky or fat or not in condition. You say he continued so for one week. If the double breathing of heaves was present, the horse could not recover without treatment. If he has improved, it could not have been true heaves, or, technically speaking, pulmonary emphysema. The causes of heaves are musty hay, excessive exertions, violent tractions during very hot or very cold weather, or when the animal goes against the wind, exhaustive running, shipping horses long distances, violent coughing spells and inhaling dusty hay.

Treatment: One ounce daily of Fowler's solution of arsenic, increasing ½ ounce every fourth week. Give as small a quantity as possible and feed easily digested and nutritious food. Use the following powders: Sulphate soda, 8 ounces; chloride soda, 4 ounces; bicarbonate soda, 4 ounces. Mix, and make twelve powders, giving two daily in feed.

TEETH NEED FIXING.

TO THE EDITOR:—Can Dr. Creely inform me through the PACIFIC RURAL PRESS what ails my two horses and remedy for same? The horses are eleven years old and get plenty of good feed—rolled barley, black oat hay and green cut barley. I have fed condition powders, composed of elecampane, fenugreek and sulphate of iron; but the horses do not seem to pick up. The hide is loose and hair lies smooth. They do not appear to be sick, only we can count the ribs. The horses are not worked to death.—OLD SUBSCRIBER, Watsonville.

The teeth must be fixed by some one qualified. Continue the same condition powders. Dr. Sommers of San Juan is a competent veterinarian.

WARTS AROUND THE EYE.

TO THE EDITOR:—What shall I do for a horse that is afflicted with something resembling cattle warts around one eye? It started two years ago and grew gradually worse until it surrounds the eye: it is swollen until the eye is nearly shut. I have used grease, arnica salve, wormwood wash and other simple remedies, but everything seems to aggravate more than it relieves.—NOAH COREY, Salinas.

Remove with curved scissors, after which apply once daily stick silver caustic until cured.

E. J. CREELY, D. V. S.
510 Golden Gate Avenue, S. F.

Santa Barbara Notes.

TO THE EDITOR:—Rain began to fall about 5 p. m. the 3d inst. At 10 a. m. the 5th there was a fall of 1.13 inches, all coming so gently without much wind from any source, so none of the rain ran to waste. Most of the rain fell on Friday, the 4th. Still cloudy; more rain may fall before clearing away.

The bean farmers are smiling audibly, although the rain will add much to their work, as all the land, whether planted or not, will need cultivating over to kill weeds and hold moisture. Beans are not yet all planted. The land has been put in better culture, but there has been so little rain the farmers had little hope of a crop.

The rain will injure hay that is cut in the fields, but will improve the late sown, so more of it can be cut. The hay crop will be a light one at best.

Apple and pear trees begin to bloom. Apricots will be a short crop, much of the wood still dormant. Walnut trees never have been so slow to start. Many of the trees look as though their tops were half dead, only showing growth here and there. The best varieties of peaches have very few blossoms, so the prospect is not favorable for many peaches.

It seems the fruit and nut trees are not decided what to do, whether to grow or not to grow. The rain and cloudy weather may prove a blessing all along the line. We hope so and will go ahead.

O. N. CADWELL.
Carpinteria, May 6, 1900.

Santa Clara Fruit Exchange.

The regular annual meeting of the Santa Clara County Fruit Exchange was held in San Jose Saturday last. About 250 members were present. The morning session was devoted to the report of the president, Philo Hersey, from which the following is taken: Total fruit received, 1899-1900: Prunes 9,225,631 pounds; silver prunes, 228,296 pounds; apricots, 189,362 pounds; peaches, unpeeled, 653,319 pounds; peaches, peeled, 31,494 pounds; plums, 19,243 pounds; pears, 46,349 pounds; cherries, 2938 pounds; apples, 1807 pounds; almonds, 58,356 pounds; German prunes, 4521 pounds; nectarines, 855 pounds; total, 10,462,171 pounds.

This statement shows 1,941,244 pounds more fruit received last year than in any previous year. Sales are being made nearly every day, and it is expected that all on hand will be sold and go into consumption before this season closes.

CASH ACCOUNT.—Dr. to sales and loans, \$417,150.60; sacks, sulphur, soda, etc., \$1677.37; stock, \$2235.00; total, \$421,062.97.

Credit by advances on fruit, \$361,682.60; salaries, \$3563.84; stationery, telephone, etc., \$703.17; interest and insurance, \$3167.09; commission, \$2706.00; construction, \$14,439.23; pay roll, \$5494.42; boxes and boxing, \$18,959.39; sacks, \$4061.83; warehouse expense, \$3661.92; cash on hand, \$2623.48; total, \$421,062.97.

This account shows the volume of cash transactions during the year ending May 1st, 1900.

ELECTION.—The afternoon session was given over to the election of a board of directors. Each stockholder was allowed one vote for every share of stock held. The balloting for directors resulted as follows:

Philo Hersey, 2546½; Noah G. Rogers, 2892; C. F. Wyman, 1792; C. W. Childs, 2047½; J. T. Grant, 1338; O. Stevens, 1226; A. Y. Chamberlain, 1202; F. H. Babb, 2172; J. A. Wetmore, 1268.

The above nine candidates received the highest number of votes and were declared elected directors for the ensuing year.

The Skunks of California..

If there was ever a useful animal misused, it is the skunk. Here in California we have two kinds of skunks; the large one you have in the East, with the white stripe along the back, and the big bushy tail, and also a skunk about one-third as large as the former. He is black with no stripe, but has white dots over his body about 2 inches apart, just as though some one had struck his finger in white paint and then touched Mr. Skunk all over. These white spots on his black coat make him look quite pretty. He works day and night, in rain or moonlight, for the farmers benefit, so attentive to his job, hunting mice, gophers, grubs and insects, that he seldom looks up from his task, but, like his big brother, mankind, for whom he works for nothing, must attach a slander to him which causes his death wherever he is spied. Here he goes by the name of the Hydrophobia skunk.

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and of course must be killed at once. No one knows of his ever biting anyone or anything, but the name is enough, and he will never lose it. People who wish to raise skunks should come to these mountains of California, where the skunks are plentiful. About one acre in a thousand is cultivated in the mountain country here, and every mile square is a skunk ranch. There are ten of the larger ones to one of the smaller. They are easily caught with a box trap, such as we use to catch rabbits. I have caught two at a time in a box trap.

Where beehives are set on the ground, the skunks come and thump with their paws on the hive, and then, when the bees tumble out of the entrance, the skunk rolls on the ground, so as to get his hair full of bees; then he goes off and eats the bees out of his bushy hair. Often in the night I have heard the skunk squeal like a little pig in the apiary when stung on the nose by bees. A neighbor who had an apiary caught forty-eight skunks in one month with two traps near his beehives.—H. F. W. of San Diego Co., in Rural New Yorker.

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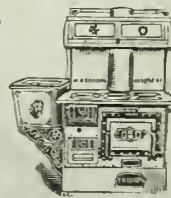
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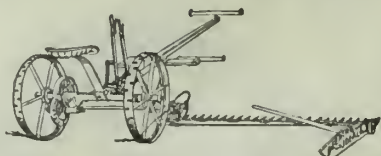
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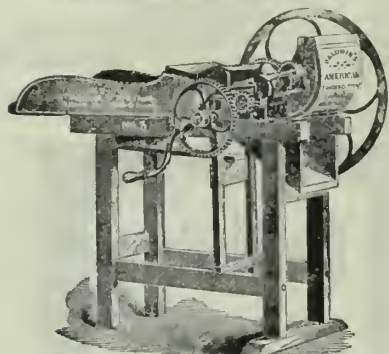
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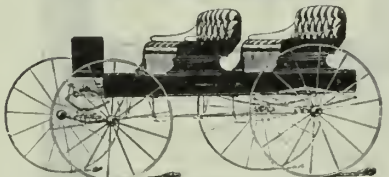
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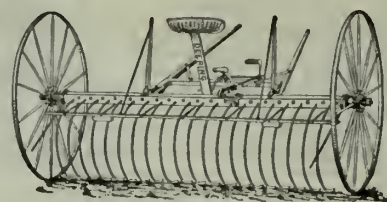
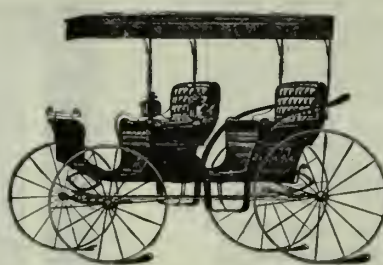
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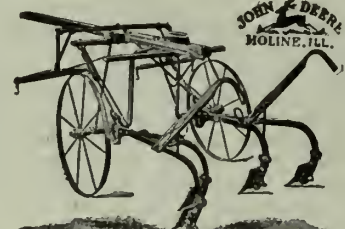
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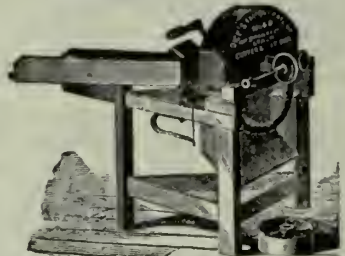
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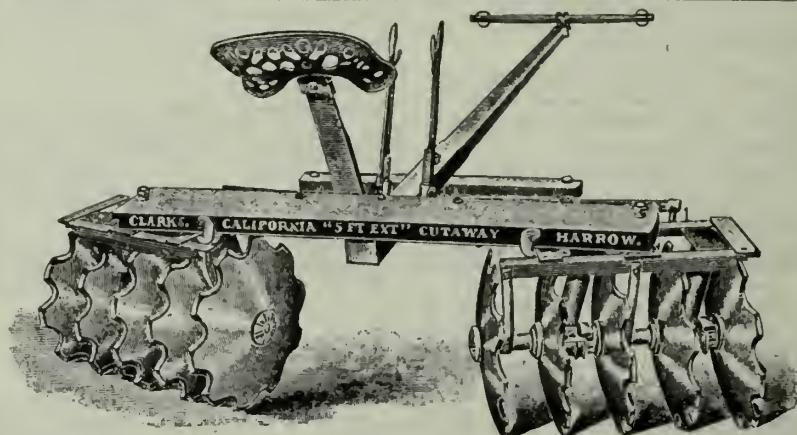
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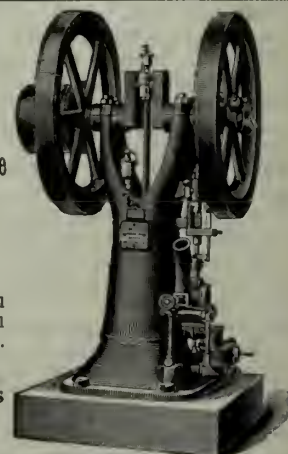
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 20.

SAN FRANCISCO, SATURDAY, MAY 19, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Pan-American Horticulture.

Although the great exposition at Paris is now open and naturally occupies a very wide angle in the public eye, there will follow it in this country an exposition which promises to mean even more to the western hemisphere. The work for the Paris Exposition has been largely completed and California will be finely represented there. It only remains to add the fresh fruits of this summer's growth to the splendid collection of productions which is now in place in Paris. Thus we have done what we can to bring California prominently to the mind of Europe. It is now just the right time to see what we shall do for the Pan-American Exposition which will be held next year in Buffalo, N. Y. This will be effective in bringing our State to the attention of American home seekers and the desirability of our productions to the people who must naturally be our chief customers. In order that our readers may have time to grow special material for exhibition and to save the best of this year's productions in permanent form, we make this early allusion to the preparations for the horticultural features of the exposition.

There will be a group of structures known as the horticultural group, of which a picture is given upon this page. These will be situated adjacent to a magnificent court 3000 feet long, with a transverse court 1700 feet from east to west, besides subordinate courts. All of these open spaces are to be beautified with palms and other tropical plants placed beside the fountains and pools. To these will be added sunken gardens of elaborate arrangement, and formal flower beds wherever their presence will enhance the beauty of the courts. The various buildings of the exposition are to have red tiled roofs and the walls are to be tinted in a variety of colors so that the brilliancy of the architectural works will vie with the blossoming beds to fascinate the lovers of fine color effects. Among the flowers and foliage plants will be many sparkling fountains to enliven the beautiful scene. The entire outer wall of the exposition grounds is to be a bank of solid foliage. Many thousands of trees, shrubs and cuttings have already been



Horticulture Group at the Pan-American Exposition.

planted in preparation for the elaborate horticultural features. Large trees which fortunately were already upon the exposition site have been preserved by transference to places where their stately shafts of green would heighten the color effect in contrast with the brighter hues of the buildings.

The building to be devoted to the Department of Horticulture, of which F. W. Taylor is chief, is 220 feet square. It has two arcaded wings sweeping from the north and south facades to the eastward and connecting with other buildings to form a semi-circular court. West of these arcades are the conservatories in which will be displayed the palms and other plants of tropical origin. The arcades leading from the main building will be kept gay the entire season with flowering and ornamental plants. The large building will be used for the display of fruits and various other exhibits pertaining to horticulture. The Horticultural Building will be one of the most picturesque of the entire group of large Exposition buildings. The loggias which form the eastern entrance will be richly adorned with frescoes. Two of these compositions will represent Ceres, the goddess of the harvest, bearing in her arms a sheaf of wheat, her chariot drawn by three lions led by Flora and Primavera.

The exhibits to be made by the leading florists of the United States will be situated south of the Horti-

cultural Building. To these displays some six or seven acres of land will be devoted. William Scott of Buffalo, a prominent florist and well-known contributor to literature upon flowers, will have charge of the floral exhibits. Several prominent horticulturists have already entered for the competition of 1901. In these displays there will be over 500 beds in which will be shown every popular flower known, from the low-growing verbena to the stately dahlia and hollyhock, etc.

Zapote-Blanco.

One of the most interesting semi-tropical fruit trees in California, in view of its age and historical associations, is shown in the larger engraving on this page. Dr. F. Francesechi, the well-known introducer and propagator of rare exotics, gives the tree due honor in his latest publication as manager of the Southern California Acclimatizing Association, which has just appeared and which gives full lists of the plant treasures which he possesses. Dr. Francesechi deserves credit for maintaining an emporium of plants, many of which are simply rare and beautiful, while the recent trend of our horticulture is so strongly toward commercial planting, and we are glad of opportunity to call the attention of our readers to his work. The tree which the engraving shows

is sound and vigorous, although nearly a centenarian. It is the pioneer of exotic trees introduced into California and stands in the very heart of Santa Barbara, on West De la Guerra street, two blocks from State street. The Zapote-Blanco (*Casimiroa edulis*) is a native of Sonora and other temperate regions of Mexico, and belongs to the order of Rutaceæ, which comprises also the so-called "citrus fruits." It has a huge warty trunk, dense spreading crown, evergreen trifoliate leaves, and bears small greenish flowers followed by globular yellow fruits, very sweet, and endowed with very remarkable narcotic power, so that they are said to be used in Mexico for the treatment of insomnia. The Santa Barbara tree, most likely a seedling, happens to bear very small fruits, which probably accounts for its not having been more widely propagated. A few feet only from the tree, almost hidden among the weeds, the foundations are to be seen of an adobe building where Colonel Fremont established his powder magazine in the early times of the occupation of California. In the absence of an appropriate tablet, the large Zapote watches as a sentinel these old memorials, a much older evergreen memorial itself.



The Pioneer of Exotic Trees at Santa Barbara (*Casimiroa edulis*).

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E. J. WICKSON.....Horticultural Editor.

San Francisco, May 19, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Horticulture Group at the Pan-American Exposition; The Pioneer of Exotic Trees at Santa Barbara (*Castilleja edulis*), 305.
EDITORIAL.—Pan-American Horticulture; Zapote-Blanco, 305. The Week; Agricultural Co-operation in California; Miscellaneous, 306.
QUERIES AND REPLIES.—Forcing in California; The Prune Aphid; Speltz and Cow Peas; The Pestiferous Polycaon in Pears; False Chinch Bugs; Welcome to Aliens; Leaf Spot of the Apple; Garden Slugs; Wholesale Johning Prices, 307.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending May 14, 1900, 307.
HORTICULTURE.—Apple Growing in Southern California; California Orange and Lemon Crops; On the Puffing of Oranges, 308.
FRUIT MARKETING.—The Prune Association; Crowding Down Prices; Packing Evaporated Fruits for France; United States Fruit in Germany; The Prune Situation; The Raisin Arrangement Proceeds, 309.
THE DAIRY.—More About Calf Rearing, 309. Support Congress Against Bogus Butter, 310.
THE POULTRY YARD.—Timely Suggestions, 310.
THE FIELD.—Hop Growers' Co-operative Movement, 310.
AGRICULTURAL REVIEW.—311.
THE HOME CIRCLE.—The Bachelor Girl; Found Her for Keeps; The People Who Are Loved; The Bamboo Flute; Handkerchiefs and Disease; The Model Wife; Little Things, 312. An Okanagan Nemesis, 313.
DOMESTIC ECONOMY.—Domestic Hints; Black Coffee—How to Make It; Hints to Housekeepers; Too Much Salt, 313.
THE MARKETS.—Produce Market; Fruit Markets, 314-315.
PATRONS OF HUSBANDRY.—Tulare Grange; From the Worthy Master; Fire Insurance Convention, 316.
THE IRRIGATOR.—Prof. Mead's Work in California; Geological Survey Work in the San Joaquin, 318.
THE VETERINARIAN.—Anthrax and Black Leg; Answers by Dr. Creely, 319.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 317. The Nation's Wheat Crop; What is Needed to Gain Success, 318. The Racing Outlook; Demand for Prison Grain Bags, 319.

The Week.

Showers have fallen since our last report and growing weather bids fair to hold later than usual this year. Some hay and early fruits have been injured but the benefits on the whole largely outweigh the injuries. It is turning out to be a better season than expected in the favored districts and less disastrous than has been feared in the least favored. California will go through the year in good shape and answer the increased inquiry for California investment and home making which is coming from most distant parts. People are coming to California from all directions, and if our own experience is any criterion they are going to be very glad of it. There is still plenty of room and glorious climate enough to cover several millions more of people.

Wheat is drooping again this week, falling more than it should according to drops elsewhere. The weather, which bids fair to enlarge the local crop, seems to be the controlling cause. Barley is easier for the same reason. Corn is governed by Eastern conditions and is a little easier, but still high, though the increased moisture at the south promises a larger California product. Oats are steadier and in fair demand. Old hay is fairly steady and new hay is weak. Millstuffs are unchanged. Beef and mutton are quiet, lamb easier and veal scarce and firm. Hogs are $\frac{1}{2}$ ¢ off, but are still too high for the packers. Butter and cheese are unchanged, eggs dull and weak and prices being shaded slightly. New onions are steady, while potatoes, both new and old, are weak and lower. Futures on dried apricots are said to be sold at 7@7 $\frac{1}{2}$ ¢ for late July and August delivery at producing points. These early transactions should not be given too much weight. Nothing is reported in other dried fruits and canners are still silent about values for their selections.

ALEXANDER CRAW, quarantine officer for the State Board of Horticulture, has seized a consignment of trees from China which were badly infested with *parlatoria zizyphi*, a small black armored scale which is considered among the most dangerous of citrus fruit tree pests. The trees came from China by way of British Columbia. The scale originated in China.

Agricultural Co-operation in California.

The writer has been in a position to observe with some degree of closeness the progress of co-operation among agricultural producers in California for the last quarter of a century, and as the co-operative effort seems still to be advancing with a somewhat halting gait, the temptation is strong to indulge in comment upon its course, in the hope that some encouragement may be drawn from the historical review.

A little more than twenty-five years ago the Grange rose to great numerical strength in California by unfurling the banner of co-operation. It promised to realize speedily all the reforms which its optimistic promoters of that day could think of. It equipped in San Francisco three co-operative concerns for banking, produce selling and supply buying and for insurance, of which but one exists at the present time. The disappearance of the others was due to several miscalculations, misconceptions and mismanagements. The chief miscalculations were in anticipating an immediate outflow of trade from established channels to the new avenues which were opened and in anticipating notably higher returns than were secured for the old agencies. The chief misconceptions were that farmers of ordinary experience and ability could master in a few weeks the sciences of commerce and finance and the intricate practices of transactions based upon these sciences, and that little or no capital was required in the sale and distribution of products—providing producer and consumer could be brought into mutual contact. The chief mismanagement was the natural operation of ignorance and inexperience on the part of those employed to proceed upon these miscalculations and misapprehensions, and who did not know that the very conditions entering into the foundation of the institutions intrusted to them made their success impossible. It is not strange, then, that the first few months of experience demonstrated, not the success, but the failure of these concerns as large co-operative affairs. Whatever lease of life they afterwards enjoyed pertained to them as corporate banking and trading concerns, in which they were neither worse nor better than the class of small corporate establishments to which they belonged. But they all died in infancy, so far as their co-operative existence is concerned, though the surviving one may have done good work for its stockholders as a corporation.

The significance of this reminiscence lies, it seems to us, in the fact that the old miscalculations, misapprehensions and mismanagements which brought chagrin and disappointment a quarter of a century ago have beset all our struggles toward effective co-operative organization ever since that time, and though we have made notable strides these old fetters and shackles have been merely somewhat loosened and not stricken off.

Take, for instance, the miscalculation that an effective proportion of people could be at once turned from established to new ways of doing business. It wrecked the California Fruit Union before it was fairly launched, and left it to float for a few years as a life raft for a few private interests. It has figured in the failure of several later attempts at organization, and during the present year it has menaced the life and usefulness of the Raisin Growers' Association. It may be theoretically correct for producers to undertake all the acts of production, preparation and sale, but such a condition is at present practically unattainable on a large scale. Packers and merchants not only have business investments and interests which they will not sacrifice nor transfer, unless they desire to do so, and they have influence enough to hamper and perhaps defeat undertakings which need the support of their friends and retainers to reach success. Not only so, but there is an amount of conceit and inertia among producers themselves which will always restrain a certain fraction of them from placing their property in the hands of others whom they think no more talented than themselves. We have had enough experience, it seems to us, to demonstrate that the people are not ready for radical change in agencies and methods, no matter how completely their desirability may be demonstrated on theoretical grounds.

And yet, though it may appear that the more ambitious plans for control of trade and distribution may not be immediately attainable, it is encouraging

to discern indications that such may be ultimately attained if found practically essential. The success of local co-operative efforts is as marked as is the failure of more sweeping schemes. In all parts of the State there are organizations which control sufficient parts of the output of their kinds to greatly advance growers' interests and to check greed and unfairness on the dealers' side. These are educational institutions in the co-operative line. Their graduates will be ready ere long for advanced courses in the higher institutions, which will in due time be realized. There is also the clearest encouragement in the fact that general undertakings controlling certain very important phases of the handling of a whole product have accomplished so much. The success of the raisin growers in fixing prices and correcting abuses in packing and sale is the most significant co-operative success ever achieved in California. That it has been obliged to abandon a more ambitious undertaking and return to its earlier foundation is new demonstration of the strength and truth of that foundation. That the packers concede the fixing of prices for the whole product is a triumph which should not be underestimated. The Cured Fruit Association promises to bring the prune product under the same wholesome rule this week. It is so near success that it must not be allowed to fail. Both dealers and growers urge this consummation.

In the removal of the misconception that any man whose attention has been engrossed in production can at once become an acute and effective manager of a large commercial business, very much has been gained. Twenty-five years ago they even attempted in some cases to use managers who had never succeeded in anything. No such mistake is made to-day. Men of good executive ability, and with successful records in business as well as in production, are in charge of the co-operative affairs of to-day. They are doing well and have shown their ability to cope with all the shrewdness and subtlety and bravado which their opponents can muster. There is, however, enough of the old feeling prevailing in some minds to oppose co-operation, because the managers are paid as liberally as they would be in other places of commensurate commercial trust and importance, and some object to this, although their work increases the objector's receipts a hundred or a thousand fold above the cost of the service to him. We shall have to escape this attitude. The cheapest man is he who knows how to succeed, and the most costly man to the members of a co-operative enterprise is the man who fails, and this would still be true though not a cent were paid him for his services.

Another misconception which is swiftly passing is that direct trade between producer and consumer is possible. The idea may have been tolerable a quarter of a century ago, when our surpluses were but beginning to enlarge, but it is now clearly intolerable with the vast volumes of products which have to go beyond even this hemisphere for sale. We need the help of the most effective selling and distributing agencies; we need the use of large amounts of capital. The co-operative art of the producers would at present seem to lie in using all these agencies without permitting conflict to the detriment of the product, and this will be largely accomplished by regulation of prices, at which all alike obtain the product.

Our associations have been fortunate in having escaped scandals in management. There have been mistakes and follies, but we do not remember that crime has been alleged. Early mismanagement was due to ignorance and conceit in the managers and in those who selected them. These two curses of ignorance and conceit are now the chief obstacles in the advance of our co-operative undertakings. They cannot be immediately set aside. It will take time to educate the mass of producers up to the plane of effective and intelligent co-operation. With this education will come, we hope, more trust in mankind, for without this no united action is possible. Many men will still trust more to a smooth and slick stranger than to a neighbor whom they have known for a decade. Many will ship the result of their year's work to a soft-voiced swindler when they will not join with their own neighbors in co-operative associations. Education will cure this, but none can tell how soon. Still, enough is being done each year to satisfy reasonable anticipations, and the lessons of the last twenty-five years are begetting wisdom.

QUERIES AND REPLIES.

Forcing in California.

TO THE EDITOR:—Can you inform me if the raising of very early vegetables under glass has been tried in California to any extent, and if, in your opinion, such practice is likely to be reasonably profitable? Can you also refer me to any publications treating of hothouse economy?—H. M. GERRARD, Skyland.

There is very little forcing done in this State. The glorious climate is somewhat against it because some frostless spot may send from the open air just the produce which you have raised at greater cost under glass. Again many of the plants which bring profit when forced at the East are here grown nearly everywhere in the open during the winter. Still once in a while some cucumbers would pay well, if you did not have to many of them. Tomatoes from holdover vines will almost always take the profit from the forced unless you arrange to have your crop just between the holdovers from the Cahuenga valley and the new ones from the Vacaville region, etc. Forcing has to be undertaken with much shrewdness in California and sometimes the shrewdest man will stay out of it. As for the general principles of this branch of horticulture, a book by Prof. Bailey entitled "The Forcing Book" can be furnished you from this office for \$1 postpaid. It deals with Eastern winter temperatures and naturally prescribes more costly outfits than are required in this State, still it will be found very suggestive.

The Prune Aphis.

TO THE EDITOR:—I send you to-day a box of scale from an orchard of a friend of mine. I am somewhat at loss as to what they are and the remedy to use, if any, to get rid of them. The ants and ladybirds seem to eat them.—WALTER ARMSTRONG, Sebastopol.

The branch which you send is not infested with scale but with plum aphids. The remedy is to spray with either the kerosene emulsion or the resin wash, of which the quantities are given in the PACIFIC RURAL PRESS of May 5th, for the brown apricot scale, as the same treatment suits both insects. The ladybirds eat the aphids freely, the ants are merely foraging for the honey dew which is exuded by the aphids. We also find on the branch two larvæ of the syrphus fly described in this column in our issue of May 5th. They are the greenish grubs there mentioned and are very vigorous aphid eaters.

Speltz and Cow Peas.

TO THE EDITOR:—Where can I get "speltz" for trial here? They claim it should be put in early in fall and I want to be prepared, as from accounts it would be suitable for this climate. Also if you think "cow peas" would be a success here at 1650 feet altitude?—SUBSCRIBER, Humboldt county.

Speltz is a very hardy member of the wheat family grown in the extreme north of Europe. It may be of value in mountain regions in California for winter growth in places where better wheats are winter-killed, but we see no value in it where ordinary wheats are able to stand the local frosts. It may, however, serve a good purpose for winter pasture, just as rye does in some parts of the State. Our seedsmen can supply the seed or can easily get it from the Wisconsin seedsmen who have recently been making a run on it because of its hardiness. Cow peas will grow with you if you can grow corn or beans and at the same season of the year. The cow pea is a bean and is tender like other beans.

Garden Slugs.

TO THE EDITOR:—I have been raising our own vegetables the last few years, but this year my garden is overrun with black snails that eat everything as fast as it comes above the ground, and such as beans they eat in the ground. Can you give me a remedy to destroy these pests, and what causes them?—SUBSCRIBER, Santa Clara.

Slugs are most troublesome when least surface cultivation is done. They move readily over hard ground and thrive when the ground is moist. They are able to make little headway when the ground is kept loose and dry on the surface by repeated stirring. Gardens which are watered by sprinkling and soil stirring is neglected are always sure to become so infested that the plants are sluggish to death. If you can sufficiently reduce them by working for a dry, loose surface you can trap the pests by placing pieces of board here and there, under which they

can collect until you are ready to boil them. Or mother hens can be cooped near the beds so that the small chicks can hunt them, which they do very effectively. Or you can poison them by taking one ounce of Paris green to five gallons of water, stir it well, and while it is still in motion dip lettuce or cabbage leaves in it and then place them around here and there just before nightfall. We have done all these things successfully, but except in a winter where it rains so frequently that the ground cannot be worked at long intervals, we rely upon discouraging the slugs with a dry, loose surface, which they cannot traverse far without sliming themselves to death.

The Pestiferous Polycaron in Pears.

TO THE EDITOR:—Can you tell me what kind of a bug the enclosed is? He is doing bad work on my pear trees by boring a small hole in the small twigs where they join the main branch, and in a few days the twig is dead with all its fruit. I cannot find it described in any of the books.—ISAAC P. MARTIN, Boulder Creek.

This is the twig borer described in this column last week as boring into vine canes at Fresno. It is pictured and described on page 450 of "California Fruits" (third edition). As its work in the olive is there shown, you perhaps did not expect to meet the same pest in the pear, but so it is. It looks as though we might find it in all our fruit trees.

False Chinch Bugs.

TO THE EDITOR:—We send sample insect which is crawling up yearling trees, sucks the sap out of foliage and out of limbs. We have tried sulphur, lime, kerosene, Paris green, etc., and nothing kills them. There are millions of them here. Kindly give us the name of insect and the remedy.—READER, Fresno county.

The postmaster did his best to stamp the identity out of the specimen. It seems to be the false chinch bug—nysius destructor—which is usually doing the work you describe on vines but does not reject trees. It is a small sucking insect and hard to kill. We should use the resin soap wash described in this column in our issue of May 5. This insect drops if the plant is quickly shaken and with small trees it may be found effective to drop them into a shallow pan of kerosene placed underneath.

Leaf Spot of the Apple.

TO THE EDITOR:—I find my apple trees affected as the inclosed leaf shows. Is it serious, and what is the remedy?—G. F. V., Sea View, Sonoma Co.

It is a case of a leaf spot fungus, which we do not remember to have seen on the apple before. It is certainly not a serious pest thus far. With you its seriousness will depend upon the amount of the foliage affected. A few leaves of many trees will show leaf fungus, and unless the foliage becomes generally affected may not require treatment. If the evil is considerable, use the Bordeaux mixture at once and its spread will be checked.

Welcome to Aliens.

TO THE EDITOR:—Was there an amendment to the State Constitution passed about the year 1894 to prevent alien non-residents from purchasing land in this State. I have a friend in England who was about to purchase land here with the ultimate intention of making this his home, but this question of residence has cropped up.—F. G. DEANE, Morgan Hill.

There is nothing to prevent a foreigner from buying private property in this State. Foreigners are doing it every day—and are, we hope, getting the worth of their money.

Wholesale Jobbing Prices.

TO THE EDITOR:—Your last market report quoted dried prunes 40s, 50s, in sacks, 3½@4c. Our retail grocer says that he has to pay 5c for that quality of prune in sacks and cannot get them for less. Why this difference?—JOSEPH WOOD, Summerland.

Our prices are at wholesale; your grocer probably buys small lots at jobbers' prices.

B. M. LELONG, Secretary of the State Board of Horticulture, has just published a special report on citrus fruit growing in California, which is very creditable to his energy in research and taste in illustration. It covers various features in the production of this important class of fruits in this State and should be widely distributed. We presume it

can be had from any member of the State Board or by application at the offices in this city and Sacramento.

THE House of Representatives proposes to find out the amount and character of the matter used in the manufacture of oleomargarine by several manufacturers.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 14, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

COAST AND BAY SECTIONS.

Conditions have been favorable for grain, fruit and all growing crops, except hay, which has been damaged to some extent by the rain. Grain has been greatly benefited in all sections, especially in the southern coast counties, and in that section it is now probable a fair crop will be harvested; in the northern counties prospects continue good for large crops of wheat and barley. A large acreage of beans is being planted. Hops are backward. Deciduous fruits are maturing rapidly, and some varieties have ripened during the week in many orchards. Some stations report that the yield of apricots will be larger than the average, while in others the crop will be nearly a failure. Vineyards are making good growth.

SACRAMENTO VALLEY.

More than average cloudiness has prevailed during the week, and light rain has fallen in all sections. Conditions have been favorable for fruit, late sown grain and pasturage, but somewhat unfavorable for early grain, which has shown signs of rust in a few fields. Haying has been retarded, and cut hay has been slightly damaged. Black Tartarian cherries and early strawberries have also been injured, in some sections, while others report no damage to fruit. The damage to hay and fruit will be more than offset by the improved condition of grain and other crops. Wheat and barley continue in good condition generally, with promise of an unusually large yield. Hops are doing well. Oranges are setting well, with indications of a large crop. Deciduous fruits are maturing rapidly. Apricots and peaches are being shipped East from Vacaville.

SAN JOAQUIN VALLEY.

Generally cloudy and cool weather, with heavy rain, has prevailed during the week. The rain of the 10th and 11th was unusually heavy, averaging over an inch. Thus far the rainfall in May at Fresno exceeds that of any May during the past eighteen years. Nearly 2 inches of rain has fallen, the average May rainfall being half an inch. The rain damaged hay considerably in some sections; cherries and strawberries were also damaged to some extent, but the benefit to the grain and fruit crops more than compensates for the damage. Fruits of all kinds are doing nicely; grapes are setting well. There is some fear of rust in the early sown grain if the damp weather continues, but as yet it has only affected the leaves in some sections. Late sown grain will make a good crop, and much which was expected to be cut for hay will now yield a good crop of grain. The wet weather has stopped haying temporarily. Grain is ripening rapidly in some sections. Cherries and strawberries are being marketed.

SOUTHERN CALIFORNIA.

The heavy rain of the preceding week was followed by warmer weather and by light showers on the 10th and 11th. In some sections the rainfall during the past two weeks amounts to fully 2 inches, and probably averages over 1 inch throughout the district. This, with the remarkably heavy snowfall in the mountains, will insure abundance of water for irrigation during the season. Cut hay was damaged to some extent. Late sown wheat was benefited, and it is now probable that a small crop will be harvested. Orchards and all vegetation have been greatly freshened by the recent rains. The prospect for a good crop of beets and beans has been much improved. Bean planting has commenced. The prune and peach crop is reported as nearly a failure in the vicinity of Pomona. Walnuts are developing slowly, but look well.

LOS ANGELES SUMMARY.—Fine growing and hay-drying weather the first of the week, followed by rain; considerable mown hay was spoiled, but late grain and hay were greatly benefited. The ground is well soaked and growing crops and trees are reaping immense benefit.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, May 16, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week	Maximum Temperature for the Week
Eureka.....	.08	48.57	33.35	42.05	48	60
Red Bluff.....	.54	22.83	20.08	25.48	46	56
Sacramento.....	.40	20.08	14.01	19.87	44	54
San Francisco.....	.22	18.42	16.00	21.98	48	64
Fresno.....	1.64	10.14	7.18	8.55	44	50
Independence.....	.00	3.66	1.21	4.52	40	54
San Luis Obispo.....	.38	16.82	16.41	16.58	44	56
Los Angeles.....	.36	17.30	5.01	16.59	48	58
San Diego.....	.06	5.88	4.96	9.31	52	74
Yuma.....	.00	1.29	1.34	2.87	74	52

HORTICULTURE.

Apple Growing in Southern California.

NELSON WARD at the University Farmers' Institute at Compton.

Before starting to grow apples for commercial purposes, two things should be considered; first, that a good market awaits your fruit; and second, that the land you have will grow a large and good quality of fruit. If the above can be answered in the affirmative, then you are in a fair way to commence to grow and market apples.

The next step is what kinds to plant. Grow those varieties that are suited to your soil and are in the lead in the market. Buy your trees from a responsible nurseryman, and, if you can, purchase only one-year-old trees that have made a large and thrifty growth. Avoid one-year-old tops on two or three-year-old roots, if they have many branches on them, because the branches may be where you would like to cut back to start the main branch from.

PREPARING THE LAND.—Shall the land be leveled or not, is a debatable question. Some claim that by removing the top soil the trees fail to make the growth and yield the fruit they otherwise would. Whichever way you may decide this question, it is important that the land should be plowed and thoroughly pulverized before setting the trees.

PLANTING.—We now come to laying off the land before planting. Use the way that you can work best to get the trees in straight rows. The writer usually measures the outside rows and then by having a man to stake for the place where the tree is to stand and two more men to sight him into line the work can be done quickly and satisfactorily. The distance apart to plant will vary according to soil and variety you are planting. The square system is most commonly used and is probably the best. Quineux is planting the trees in squares and planting another in the middle of each square. Sextuple or hexagonal, is planting so that all the trees are equal distance apart, something like bees shape the cells in a honeycomb. This system will give 15% more trees to the acre than the square system. Having the land staked off, take a board 1x3x4 feet long and bore a 3/4-inch hole near each end, and in the center saw out a notch about 1 1/4 inches long and 1 inch deep. Then place the board so that the stick that represents where the tree will stand is in the notch, always placing the board in the same position, that is if you can start with the ends east and west. Keep it so until the planting is finished.

The man sighted into line for the trees should drop an extra stick so when the one is pulled up to be placed into the holes at the ends of the 1x3, the other is there to be used. Dig the holes 2 feet in diameter and deep enough to set the tree 3 or 4 inches deeper than it was in the nursery. Place the top soil by itself and if not too dry use it next to the roots. Lean the tree a little against the prevailing winds, spread out its roots, then shovel the soil in the hole slowly while another man holds the tree in position, and as soon as the roots are covered tramp the soil around them. If the tree is not straight and has a bow in it set it so the bow is from the winds, then they will have a tendency to straighten in.

PRUNING.—Don't cut off the tops until after the trees have been set, and then cut them all as near a uniform height as possible. The height to cut, where the land is level, I would recommend from 2 to 2 1/2 feet, leaving the top bud on the east side and the other two more on the west. This gives three main branches and if there can be a vigorous growth made in the spring and summer, the second cutting, which should be 15 or 18 inches above the first one, can be done in July or August, or as soon as the branches are large enough to support two or more branches, thus gaining one year's extra growth the first year.

Much depends on the start the young trees get the first year. If possible and without too much expense, irrigate them once or twice in the early part of the year. If you can afford it cultivate the land without raising any crops for two seasons. First, nearly any crop will dry out the land, and, second, almost any crop will invite to the orchard that little industrious animal, the gopher.

POLLINATION.—Some varieties will self-pollinate in some parts of our country but need to be crossed in other sections. This is a question that must be studied in each locality by itself. What apple to plant near another to improve both of them, if possible, is an unsettled question, and will take years of careful study to determine. Care should be taken to plant those varieties together that bloom at the same time. Don't depend on what you have observed in some other State, for the time of blooming and the quality of fruit may be quite different here.

HANDLING THE FRUIT.—Apples should be handled carefully. They should be picked by hand and placed into the buckets, or baskets, never pouring or dropping them even a few inches. I have found the five gallon galvanized pail with hooks on it very satisfactory to pick in. If the pickers get careless and drop the apples, they can be heard at a consid-

erable distance even when the pail is quite full. Step-ladders made of light material, and from 8 to 10 feet high, is the best way I have tried to pick my apple crop. Have your boxes all made and placed through the orchard before commencing to gather apples. Place them in every third row. Then pick three rows at a time and keep the culling stand in the middle row. Move it forward a few trees when the pickers have got ahead with their work. By having about two pails to every picker they can bring to the culling stand a pailful of fruit to be culled and return to work with an empty one. By so doing the pickers and cullers will not have to wait for each other. The cullers do more work if they stand while culling. The culling stand is made about as follows: 6 feet long, 2 feet wide and 3 feet 4 inches high. This will hold three boxes or four buckets, so, if necessary, four can at the same time.

Care should be taken in handling the boxed apples from the orchard to their next destination. If the wagon has no springs place some hay in it. That will help to save the fruit from bruising.

SPRAYING.—I will not say much on the subject of spraying, as I believe it is very little understood. Two suggestions I will make, however. That the material used be a good article for the work it is intended to do and avoid the very fine spray, as it should be put on with force. Pests and other troubles there are many, both above and below the ground. They will require much study, patience, time, labor and expense, to save a fair percentage of the crop that will pass for first-class fruit. I have found six or seven different kinds of worms that work on the apples here, beside the San Jose scale, woolly aphis, fungus and blight. Below the ground we first come to the crown knot, woolly aphis, root knot, and then, day and night, first and last, and for all time, the gopher.

Many more and very destructive pests of the apple will soon reach our orchards unless great care is taken to prevent their coming through the many channels through which it is possible for them to reach our Pacific coast.

A FEW SUGGESTIONS.—1. Try to grow quality as well as quantity. 2. Thorough cultivation improves the trees and fruit. 3. A few gopher traps kept at work in the orchard will save the life of many young trees. 4. Keep some bees, they are good to carry pollen. 5. Don't know too much about pruning, lest in a few years you are minus a paying orchard. 6. The man who knows it all may be a poor guide to follow. 7. Don't turn the cows among the young trees to eat the grass. They are destructive pruners. 8. Attend all the Farmers' Institutes that are convenient. They are a good school. 9. Subscribe for the home agricultural papers. Make acquaintance of the Horticultural Commissioners, assist and encourage your local inspector and be on the mailing list of at least one University.

California Orange and Lemon Crops.

A. H. Naftzger, president of the Southern California Fruit Exchange, gives figures to the Los Angeles Herald, from which the following interesting review of the citrus fruit product is prepared:

	Cars.
Oranges and lemons shipped to date since Oct. 1.....	13,000
Oranges yet on the trees.....	2,000
Lemons yet on the trees.....	2,000
Total season's production.....	17,000
17,000 cars of 362 boxes each.....	6,154,000 boxes
Highest previous record (1898-9).....	5,000,000 boxes
Production last season.....	3,500,000 boxes
Average price obtained this year, about a duplicate of that of two years ago and very satisfactory.	

Such is the citrus fruit industry as it stands today, with an industrial value to southern California of probably \$8,000,000—that sum to be paid out to the growers and all persons who in any manner participate in the handling of the fruit, its packing and marketing.

The yield of the present season appears to have come close to meeting the highest estimates made before the harvest began, the estimates at that time having ranged all the way from 12,000 to 18,000 carloads. There was an element of especial uncertainty brought into the industry this year, as no one could tell how badly the fruit would be affected by the drought of last season. The year before there had been experienced a reduction in yield of about one-third from the preceding year, on account of the drought, the size of the fruit having been far below the normal in many districts. It was feared that the continuance of the drought would lead to a recurrence of that experience. But the horticulturists of southern California had worked heroically in building up irrigation systems to replace those which had been dissipated, and much of the lost ground has been recovered.

To the casual observer the thought might come that the yield of the present year is about the natural growth over the production of two years ago and that the State has measured its maximum power. But such is not the case; for, in spite of the fine showing made above, California might have done better under favorable conditions. Even this year

the fruit has been below normal size, and with favorable conditions the State would have turned out more than 20,000 carloads of citrus fruits.

In estimating the output of lemons for this year, there is a great deal of uncertainty. The maximum record of the lemon production of California is about 1300 carloads, but over a large area of country—in seven counties—there is a large acreage of young lemon orchards rapidly approaching the age of full bearing. While the average age of the orange trees of the State is about ten years, that of the lemon trees is about six years, and that difference in age throws on the lemons the greatest percentage of increased production in a year. So new is the industry that there is not the same systematic record kept of the orchards as is the case with the orange; and, while the best authorities are agreed that there will be 2000 cars of lemons, an increase of 50% over that figure need surprise no one.

On the Puffing of Oranges.

By J. E. CUTTER at the meeting of the Riverside Horticultural Club.

What I may advance concerning causes and remedies is tentative simply—is not to be taken as a demonstrated fact, but as fairly well supported theory.

Puffing is a development of unequal growth in the tissues—as is also splitting or bursting. But, though standing in close correlation, the two phenomena exhibit adverse action. Splitting always occurs in autumn, near the close of the season of growth. Puffing comes in spring, at the opening of the growth season. Splitting is found in the growth of the outer limbs, where the peel has become indurated by the hot sun. Puffing develops in the shade, on the north side and in the center of the tree, in fruit of soft, flabby and immature character. The orange splits because its sun-hardened peel will not yield to the pressure of the growing carpel within. It puffs because spring directs its first energies to wood growth and all nitrogenous tissues, including peel, while the making of fruit juices is in abeyance until a later day.

The two seasons, fall and spring, then, tend to this inequality of development, and extraneous circumstances further the matter. Among these latter I believe faulty cultivation to be strongly contributory. Wherever cultivation is imperfect, as along drives and roadways, and wherever the ground is subject to flooding with water, with alternate baking in the sun, excess of puffing appears. Wilting between irrigation is another cause. Fertilizing has its part in the matter also. Where nitrogen only is provided the trouble is aggravated. If we conceive of climate, fertility, cultivation—all in perfect balance, nothing to cause unequal growth of the tissues—we shall recognize conditions where there will be no puffing. But this will not be in California.

Leaving opinions, let us now come to some facts:

First—An orange that will puff will not drop, and an orange that will drop will not puff. No orange puffs unless the sap is flowing into it, and no orange drops when the sap is flowing into it. But it does not follow that all oranges will drop if they do not puff. In most of them the tissues grow too uniformly to puff.

Second—There is never to exceed 10% of puffed fruit in any district—usually not half that amount. Some orchards have much more, but a larger number are practically free.

Third—In warm seasons puffing begins early and ends early—begins with the starting of growth and ends when all of the class that are subject to puffing have passed through the stage of early growth.

From the foregoing it will be seen that there is no occasion for hastening shipment on account of puffing. Simply pick the puffed fruit instead of the better, without increasing the weekly output. The worst effect of puffing is the panic which results in dumping fruit on the market and causing a slump in prices. The wisest course to pursue is to market the fruit gradually, as the market demands it. I doubt if there really has been more puffing this year than usual, though it has doubtless been more far-reaching.

DISCUSSION.—Mr. Reed said that a loss of 10 cents a box on oranges on account of puffing means over \$3000 per day at the rate we have been shipping oranges—nearly 100 cars per day. He stated that one grower reported that his oranges fell in grade from 60% fancy to 26% fancy, because of puffing, within less than three weeks. His theories on the matter, he said, had been all upset. Use of too much stable manure, standing of waste water about the trees, too much potash, had all been accepted as a cause, but examples which he mentioned showed that these were not reliable. The puffing takes place inside the tree rather than on the outside. Mr. Reed regarded puffing as a disease which should be investigated by an expert.

Mr. Koethen said that his experience led him to favor the theory that puffing was due to letting the trees get too dry in summer.

Mr. Edmiston said that in his orchard the facts would seem to point to too much irrigation this winter as the cause of puffing.

Mr. Hall mentioned a striking example of puffing,

apparently due to insufficient irrigation and cultivation.

About the only point of general agreement was that a warm season probably increased the amount of puffing.

FRUIT MARKETING.

The Prune Association.

TO THE EDITOR:—In my native country—Holland—it is customary to give every farm and country residence a name or to distinguish it by some proverb, adage or saying, nice, wise or otherwise, as the case may be, and as suggested by the surroundings and the inclination or fancy of the owner. I remember once driving through a new section, reclaimed from the sea not many years ago, and seeing on a gate in large letters the words "Bid en Werk," which, translated into English, means, "Pray and Work," and proved beyond a doubt that the owner of the place wished, first of all, to convey to the mind of every passer-by the fact that he was a religious chap, if nothing else. But on the next gate it read "Werk en Bid," and, judging by the appearance of the fields and crops of the two adjoining farms—by the slovenly air and the abundance of weeds on the first, by the cleanliness, thrift and vigorous growth on the next—it was plainly evident that the second man, by working first and praying afterwards, had long ago reached the conclusion that the Lord helps only those who help themselves.

As a fruit grower and happy (?) owner of a ten-acre prune orchard in this glorious State of California, I felt interested enough in the success of the co-operative movement now on foot among us to become a delegate to the convention at San Jose of what since evolved itself into the California Cured Fruit Association, and afterwards to do some canvassing in its behalf—a very nice job, indeed, providing it does not rain and one has the happy faculty of not getting vexed and the ability to see the humorous side of life, things and situations.

To be taken for a minister, a constable, a peddler, a tax collector, a confidence man, a sheriff and a friendly neighbor, all in the short space of one week, smacks enough of the stage and the coulisses to be great fun, or deucedly annoying, according to the state of the weather and of one's mood.

But what interested me most was the fact that the two classes of men hardest to deal with, and to convince of the harmless nature of myself and my endeavors, were as much the direct opposites of each other in mind and manners as the sea is different from the land.

The coward and laggard who lets other men fight his battles so as to share in the victory, or save his mule hide every scratch in case of defeat, and thinks himself awfully smart by waiting to see first how the other fellows make it, is just as bad as the earnest, braving, but over-cautious man, who sees a nigger in every woodpile, and, by the very fact of his ability to grasp at once every detail of the situation, overlooks the main grand principle we are striving and laboring for—because we must.

Who can yet deny that our great fruit industry must eventually and inevitably be conducted on a co-operative basis, the same as all other great industries nowadays, or go to the wall, until another generation of wiser and better men than we are will see better than we can and act accordingly!

Must we really continue as heretofore: cultivate our prune orchards, harvest the crop and then go a-begging who for pity's sake will take the dried product off our hands; and, worst of all, be thankful that we are not bled to death in the operation? Or, are we going to stand together, work together and fight together like men?

The Lord helps only those who help themselves!

E. C. W. MACDONALD.

Aptos, Santa Cruz county.

Crowding Down Prices.

TO THE EDITOR:—As buyers are doing their utmost to make a low price on apricots and peaches, and as it is an established fact that the crops of these fruits are light, owing to the severe frosts of April, I think it the duty of the PACIFIC RURAL PRESS to so inform the growers, so that living prices may be maintained. Apricots, especially, should command fancy prices, as last season's crop is entirely exhausted and this season's crop is far from being a bounteous one. When buyers come into the field naming insulting figures, growers should scorn their offer and prepare to cure their 'cots, as there will be a good demand for this fruit if nicely handled.

HORTICULTURIST.

Eden Vale, Santa Clara county.

We have said something nearly every week for the last month warning growers against bear statistics and bear prices. There is always a motive in reports of excessive production which appear in advance of the maturing of any crop, and we have said we believed fair prices should rule this year, to coun-

teract the influence of such reports which we know to be in circulation. At the same time, growers have to be careful not to judge of crops alone by what they see in their own localities. Our correspondent's district has been hit by frost harder this year than some others, though it is also true that many localities are shy on these fruits. It is certainly too soon to think of selling at low prices, no matter what statements are made. We believe both apricots and peaches will sell well this year.

Packing Evaporated Fruits for France.

Last season a San Francisco commission firm requested the assistance of J. I. Brittain, U. S. Consul at Nantes, in procuring a market for California prunes, and he reports to the State Department the following interesting observations: I interested one of the leading importing firms in Nantes in the matter, and within a short time a good-sized order was placed with the San Francisco firm. After waiting for the goods for some months, and about six weeks after they were paid for, they arrived. The goods, I am informed, were good enough, but were packed in boxes which gave a very offensive taste to the prunes, thus creating a bad impression among the trade here. One of the Nantes importers recently received a consignment of California prunes from New York City. He told me he could buy them cheaper in California, but he wished to have them guaranteed by some one with whom he was acquainted; hence the order was given through the New York house. These prunes were nicely packed, but the dealer says he lost about twenty cases in consequence of the boxes having been made from very thin lumber. I measured one of the covers and found the lumber to be less than one-fourth of an inch in thickness.

The quality of the California prunes is superior to the French, and the duty is not excessive, being but 10 francs per 100 kilograms, or less than 1 cent per pound. If the prunes are carefully selected and tastefully packed in substantial boxes, and are always as represented by the samples, there will soon be a much larger demand from this part of France. I was recently shown samples of California apricots, packed in five-pound boxes. The first layer was composed of large yellow fruit, while underneath the fruit was not only small and inferior, but was very irregular in color. The effect of such methods can be imagined. The French people are not easily deceived, and the California fruit dealers who anticipate orders after sending such samples are making serious mistakes.

United States Fruit in Germany.

The Hamburg-Altona Fruit and Vegetable Verein, at its last meeting, protested against the establishment of a duty on imported fruits. The Ministry of Agriculture at Berlin has presented statistics of the importation of fruits, especially of fruits from the United States, and advocates a protective duty. It is claimed by the Verein that this course is pursued wholly in the interest of the agrarians, and it voted unanimously in favor of a protest, on the ground that Germany would suffer damage through the prevented importation of the American fruits, for the reason that the price of domestic fruits would be greatly increased, to the detriment of German consumers.

The following statistics show the importation of fruits from the United States during the past five years:

FRESH FRUIT.

Year.	Quantity. D.centners.	Value.
1898.....	22,718	\$127,813.14
1897.....	69,280	332,233.72
1896.....	48,000	197,515.24
1895.....	4,041	23,364.46
1894.....	3,144	14,760.76

DRIED PLUMS.

Year.	Quantity. D.centners.	Value.
1898.....	5,059	\$ 67,884.74
1897.....	10,471	142,838.08
1896.....	2,134	37,989.56
1895.....	1,590	27,053.46
1894.....	1,446	6,813.94

DRIED FRUIT.

Year.	Quantity. D.centners.	Value.
1898.....	37,505	\$601,361.74
1897.....	60,770	737,845.22
1896.....	39,978	489,258.98
1895.....	26,937	386,607.20
1894.....	11,188	187,239.36

It is claimed by the Verein that "because of the supposed detection of live scale insects on fresh apples and through the pretended poisoning from apple cuttings from the United States" the importation of such fruits into Germany has very greatly decreased. The statistics above given clearly prove the fact of the decrease.

HUGH PITCAIRN, Consul.

Hamburg, March 2, 1900.

The Prune Situation.

President Bond stated May 12 that if during the coming week the growers who have not yet signed do not come forward with contracts sufficient to cover about 2000 additional acres required the attempt at co-operative organization will be abandoned.

The following address to the prune growers of California was issued May 12 by the State Packers' Committee:

TO THE PRUNE GROWERS OF CALIFORNIA: The earnest, vigorous and conscientious effort now being made by the California Cured Fruit Association to secure control of a sufficient percentage of the prune product to regulate its sale in the interest of the grower, as well as the dealer and consumer, is worthy of your approving consideration. The time, money and effort already expended will have been expended in vain unless those now standing out will come promptly to the aid of the association by giving their contracts. If this effort fails there will be no hope of success in any new effort, nor will any effort be attempted for several years. It is generally conceded that a trial of the experiment of concentrating the product for regulating and steadying the price for the full season is the proper thing to do, and we urgently advise all growers not to let this opportunity pass, but to unite at once.

As packers and persons interested in the production of fruit, and as representatives of the packers, acting as their committee in harmony with the Cured Fruit Association, we approve of the suggestions above made, and earnestly hope for the full and immediate success of the association in securing the desired as well as necessary 90%, in order that there shall be perfect safety in carrying out the business plan and purpose. It must be understood that we, as packers, who have joined with the association as such, will be debarred from handling the fruit of any of our friends who have not signed a growers' contract with the association.

Philo Hersey, Santa Clara County Fruit Exchange; William Griffin, Griffin & Skelley Co.; A. J. Hechtman, Porter Bros. Co.; A. G. Freeman, J. K. Armsby & Co., Packers' Committee.

FIGURES ON THE CROPS.—According to the San Jose Mercury it is figured that last year's crop of prunes amounted to 110,000,000 pounds. It is estimated that this year's crop will amount to 125,000,000 pounds. It is said that there are now 7,000,000 pounds of prunes left over from last year's crop. How is this surplus, as one which is annually increasing, to be marketed? The association, if it becomes a reality, believes it can find a market at but a small differential from 3 cents. It is said that at present only 2½ cents can be obtained, and that on a slow market.

The Raisin Arrangement Proceeds.

At Fresno May 12 a mass meeting of raisin growers was held and in short order approved and adopted the plan of united action formulated by the joint committee of bankers and packers, completely restoring the harmony which had seemed impossible to be re-established. The meeting was so large that the hall secured could not contain the crowd of growers and the opera house had to be used. Ex-Judge M. K. Harris presided and called on M. T. Kearney to read the report of the joint committee and the proposals of the packers. These proposals, which had been approved by committee, involve the formation of a commercial packers' company to handle the raisin crop, including the seeding of raisins, coupled with an agreement that they, as an organization, would purchase and pay for the entire crop by January 15 of each year.

The agreement is for the years 1900, 1901 and 1902, and the packing is to be under the control of the growers' association. The packers' association is to have a capital stock of \$100,000, 5% of which is to be paid in immediately and the remainder to be called for as required. The seeding of the raisins is to be done at \$10 per ton above actual cost. The packing charges and bonus together for all other grades of raisins to be the same as provided for last season; the cash discount and commission for sales to be the same.

Prices of raisins are to be fixed by the growers' association, and the packers agree not to buy, pack, sell or handle any raisins not under the control of the growers' association without written consent, and no raisins are to be sold at less than association prices. The only condition made by the packers is that 90% of the raisin acreage of the State shall be secured before June 16. As 62% is already signed for, the rest is expected to be obtained without difficulty under the new and favorable conditions.

THE DAIRY.

More About Calf Rearing.

This question lies at the foundation of successful dairying and we frequently recur to it. The latest exhortation toward better practice is by A. M. Soule of the Tennessee Experiment Station, which will be found suggestive.

WEANING.—The dairy cow should never suckle her calf for more than three days. Some advocate taking the calf away as soon as dropped.

It should be remembered, however, that the power to give milk is the result of stimulation and maternal

instinct. It frequently happens that the calf is unable to consume all the milk produced immediately after it is dropped. The result is a portion is left in the udder. This, of course, produces inflammation and other troubles of this organ. It fails to stimulate the activity of the milk gland to its utmost capacity and soon results in a deterioration of the milk flow and a loss of the natural inherent secretory function of this organ.

After the third day take the calf away and feed for two weeks or so on whole milk, then on skim milk and adjuncts, chiefly flaxseed gruel. The milk must be fed at blood heat, between 98° and 100° Fahr. The calf should early be taught to eat a mixture of grain and fodder. In the dairy the object is a rapid growth of muscle, but not fat. No difficulty will be experienced in teaching the calf to drink if a nipple is used. Equally good calves can be grown on skim milk and adjuncts as on whole milk, and at much less expense when properly managed. The calves should be handled constantly from the beginning to make them gentle. Handle the udder parts in the heifer and thus stimulate the flow of blood to these parts, directly increasing the activity of the glands and developing the milk-producing organs to the fullest extent. Breed at about eighteen to twenty months, so that the calves may be dropped at from twenty-seven to twenty-nine months. Breeding too young is detrimental to the mother, for she cannot develop properly and support a fetus at the same time, and a stunted heifer will make a cow deficient in stamina.

THE COLOSTRUM.—The calf should first be "mothered" before it is taken from the dam. This clears the skin of effete matter and materially aids the circulation. It is very important that this be done as the calf is in a weakened condition and this aids in the development of its strength. After it is done the calf may be removed without suffering. In all instances, it should receive the first milk or colostrum. This contains properties that are purgative in nature and clears the alimentary canal of materials that otherwise might cause congestion of the various digestive organs. If you remove the calf from the dam as soon as dropped and fail to give the colostrum, disastrous results may follow. In glancing at the composition of colostrum milk it is seen to be comparatively low in water, high in solids, abnormally high in casein and albumen, low in sugar and high in ash. It is thus especially adapted to the needs of the young and growing animal. Those who have handled calves have been astonished by the rapid growth and strength displayed by young animals several days after birth. The colostrum milk is the best means of providing the animal with the requisite food for growth and development. This matter must therefore receive due consideration when weaning calves and raising them by hand. It is no trouble to raise a calf by hand, provided artificial nipples are used. The calf will then suck quite as readily as from the udder of the cow. This prevents its gorging itself and producing scours and other intestinal troubles. Should these result from careless feeding they can be remedied by the addition of lime water and by feeding in such a manner that the animal will have to take the milk slowly so that it will become thoroughly mixed with the saliva and other digestive juices and properly assimilated.

Colostrum milk creams as well as other milk, but it has a very high color, due in part to the effete material contained in it. This is caused by the incomplete disintegration of the tissues of the udder immediately after parturition. It has an acrid, disagreeable taste and is not fit for human food until from nine to ten milkings, or at least until all the colostrum particles have disappeared from the milk. In a healthy animal this will generally be accomplished in the time stated.

Support Congress Against Bogus Butter.

TO THE EDITOR:—Yesterday, by its vote, the House of Representatives at Washington showed that it was practically with the dairymen on the Grout bill. Now is the time for another movement on Congress by the people. Could you not in your next issue in a particularly prominent way urge every reader to send a postal card to his Washington representative, urging him to stand by the Grout bill, and especially to see that this bill is taken from the committee and brought before the House? Now is the time for action.

Madison, Wis., May 9. W. A. HENRY,
Dean and Director Experiment Station.

We hope our dairy readers will follow this suggestion. The bill to which he alludes is for the fuller protection of genuine dairy products. Let Congress know that the people demand this legislation.

THE POULTRY YARD.

Timely Suggestions.

TO THE EDITOR:—The season for hatching chickens is about over for this year. Experience has been gained by all, especially by those persons who took up the business for the first time this year. Those who have been for years in the business annually gain some knowledge. Although it is an old business, the

willing, observing person knows he is never too old to learn.

Now the chicks are all hatched, or practically so, for few poultry raisers think it profitable to have chickens come out later than the first of June. After the hatch, be it the most successful, comes the long cooing time—the painstaking period—beset with many difficulties before early maturity arrives.

If fullest success has not come this season, one may hope for it next year. Alertness to note where improvement can be made is important, whether one has hatched his chicks by incubator or has used hens. "If at first you don't succeed, try, try again" is a motto which the poultry man should ever have in mind.

Sales of incubators have been large this season. They are annually on the increase. Some cling to the old way; but, with incubator and brooder, the work is greatly simplified and the number of steps taken immeasurably lessened. This is a matter worthy of consideration—that of saving steps. By studying convenience, both as to brooder and in arranging the smaller coops, miles of travel may be saved each season. The idea of having houses and yards arranged in the form of a horseshoe is a good one.

The chicks are hatched and have attained a good size. If the food is well selected and due care be taken that too many are not in one colony, they will soon be plump broilers. Let it be borne in mind that there is liable to be loss from overcrowding when half-grown chicks become very hot and then cool off suddenly in the early morning, and the result is very often a slight cold, which, unless looked after, will develop into the dreaded roup. It may be worth while just here to mention an excellent remedy for these slight colds. If used in time, it will save many a promising chick. By neglecting to use precautionary or remedial means when their needs are first observed, much loss accrues. Too many of us are like the Mexicans and say "manyana" when "now" is the time to act.

The remedy spoken of is equal parts of kerosene, turpentine and sweet oil, with a good allowance of gum camphor. Insert this mixture into the nostrils of the chick with a very small-sized oil can, also putting a few drops down the throat.

From start to finish the chick, and, after it has developed into the full-grown fowl, should have a due allowance of animal food. The writer has found a good quality of meat meal very profitable to use, taking the place of fresh meat and green bone. Besides, it is much cheaper.

There has been a good demand for eggs from purebred fowls this spring. In many cases it has been difficult to supply the demand. All this speaks well for the future of the poultry industry in this State. There is little fear that it will be overdone, although so many are engaging in the business. Wyandottes and Plymouth Rocks take the lead for all-around fowls, especially for broilers, and Leghorns and Minorcas are in high esteem for their laying qualities. Neither time nor location reverses this verdict of thousands of breeders.

There are incubators and brooders, and each has its advocates. As to brooders, one may say the same; but there are home-made ones that cost but a trifle which are fully as efficient as the costly ones on the market. The simplest we have ever seen (a pattern several parties are using here), the cost of which is a trifle, is made of a common five-gallon oil can, the bottom cut out and slightly reduced in size. It is fastened by tin supports an inch or two below the top, forming a false top. The can is covered with woolen cloth, around which the little chicks huddle. A brooder lamp is placed under the can. The smoke and superfluous hot air passes upward through a small pipe soldered to the top of the can. This is placed in a box of convenient size and has proved practical, efficient and economical.

Napa, May 12, 1900. A. WARREN ROBINSON.

THE FIELD.

Hop Growers' Co-operative Movement.

We had in our issue of May 5 a hortative letter from a Sacramento grower in the interest of better prices through regulating hop production. The project seems to be advancing. According to the Record-Union there were present at the preliminary meeting hop growers from Wheatland, Elk Grove, American river, Cosumnes river, Yolo county and Sacramento and vicinity. Those present were Daniel Flint, George Brewer, Mr. Harlow, Dr. J. H. Durst, J. Casselman, Mr. Bales, Charles Calhoun, R. H. Merkley, P. C. Drescher, A. Koch, J. McGregor, F. V. Flint, A. A. Merkley, W. E. Lovedal, John Mahan, A. Mouton, W. H. Leeman, John Silva, M. Lavenson and Mr. Slight.

Daniel Flint was chosen to preside, and W. E. Lovedal as secretary.

A general discussion was had as to the advantages of forming an association to regulate the production and prices of hops, and nearly all present took occasion to express their views. Every one favored the idea.

Elwood Bruner, by request, explained to the meeting the legal side of the proposition. He had no

doubt that a plan could be formulated that would have the desired effect of binding members of the association to respect its authority.

Letters from a large number of Oregon growers to Mr. Brewer—the originator of the proposition—were read, and the writers all heartily approved of his idea.

Mr. Brewer said that all that could be done this year would be for the California growers to soon come together, organize an association and get it into working order. The growers in other States could then take it up and soon all could have associations working in harmony.

"The hop growers have it in their power," said Mr. Brewer, "to so regulate the production as to cause hops to bring a reasonable and paying price in the market. It is simply a question of demand and supply. We know what the demand is, and all we have to do is to cut down our acreage and regulate the supply accordingly. It is a simple proposition and can be carried out successfully if growers will only get together and agree what to do."

Remarks indorsing the plan were made by F. V. Flint, A. A. Merkley, P. C. Drescher, W. E. Lovedal, Dr. Durst, and many others.

The following resolutions were adopted by unanimous vote of the meeting:

Resolved, That it is the sense of the hop growers now assembled in convention at Sacramento, May 5, 1900, that an association be formed by the hop growers of California, to co-operate with the growers of other States, to the end that the hop growing industry may be fostered and improved.

Resolved, That we are ready and willing to abide by the rules and regulations of an association to be hereafter formed, which will have for its main purpose the reduction of the surplus of hops produced in the United States.

After some further discussion it was decided to call a convention of the hop growers of the State for the purpose of considering this and other matters of interest to those engaged in that industry.

Also speaking of the meeting, one of the prominent hop growers of Sacramento said: "The need of organization in the hop growing industry is too well known to admit of discussion. It is a well known fact that in prosperous seasons there is an overplus of hops. The markets are flooded and many individuals become heavy losers. All hop growers have at some time or other experienced this, and in consequence we are all more than willing to join in fostering any legitimate scheme that will assure us against loss."

"We know there is a market but for so many pounds of hops, and we propose to keep our organization informed as to the number of bales of hops each producer has on his vines just prior to the picking season. If this amount exceeds the market demand the Executive Committee will visit each yard and will cut out such a percentage of the acreage of each grower for non-picking as will leave simply a sufficiency to meet the demand."

"All the growers in the State will be treated alike, and every grower will be expected to sign our agreement and abide by our rules in this respect."

CENTIGRADE is the simplest and best graduated thermometer. Fahrenheit continues in common use from popular inertia. An easy rule for converting Fahrenheit to Centigrade degrees, is: Subtract 32 degrees and divide by 2; then add to this $\frac{1}{10}$ of itself, and, if further accuracy is desired, $\frac{1}{100}$ more. For instance, if it is required to find the number of Centigrade degrees corresponding to 72 degrees Fahrenheit, subtract 32 and divide by 2, giving 20; adding $\frac{1}{10}$ more gives 22, and, for greater accuracy, another $\frac{1}{100}$ gives 22.2. The method is not as simple when applied to the reverse calculation.

PHOSPHATE is produced mainly in Tennessee and Florida. The total production of all phosphates in Florida in 1899 was 796,691 tons. Seventy per cent of the Florida phosphate rock is exported to foreign countries, notably to Great Britain and Germany. In January, 1900, quotations were \$8.50 to \$9 per long ton at Fernandina, Fla., and \$13.13 to \$13.83 in British or North Sea ports.

WHOEVER takes a check upon a bank in his own town should present it for payment on the day he receives it or on the next day. During these two days the drawer of the check guarantees the solvency of the bank upon which it is drawn; but after that the risk must be borne by the check holder. This is the rule enforced by the courts of all the States.

THE 5-cent coin in use contains 25% nickel, 75% copper. Nickel, more than any other metal, has the property of giving color to an alloy. Even an alloy of 90% copper and 10% nickel will have the peculiar nickel tint.

THE first census of California was in 1852. El Dorado county was first in population, 40,000; San Francisco second, 36,154; Nevada county third, 20,583; Calaveras county fourth, 20,183.

IN law a bank can not act as treasurer of a corporation, because that involves personal liability. A bank may be designated as a depository, but its functions are commercial.

THE record for longest distance ever encompassed by unaided human vision is 183 miles between Uncompahgre Peak, Colorado, and Mt. Ellen, Utah.

Agricultural Review.

ALAMEDA.

FIRST CHERRIES.—Niles Herald, May 11: J. Donovan shipped seven boxes of cherries Monday. These are the first of the season from Niles and we believe the first from Alameda county. They all came from one tree, but are a week later than last year, when the first shipment was made April 29th.

LIVERMORE CREAMERY.—TO THE EDITOR: The Livermore Creamery, which was closed on account of the dry seasons of 1897-99, was re-opened during the month of March last. At first the quantity of milk brought in was limited, as the farmers of the locality had quite generally disposed of their dairy cows. The supply has increased from 800 pounds to 3400 pounds per day at present, the number of patrons being about 20. The cream from the Livermore establishment, as well as from the branch skimming station at Altamont, is shipped to the creamery of M. Y. Smith at Alameda, who controls both these local concerns under lease. Mr. Smith also runs a dairy ranch near Livermore. The capital stock in the Livermore Creamery is owned by local people. A. L. Young is acting as superintendent.

BUTTE.

LOW EXPRESS RATES ON FRUIT.—Chico Enterprise, May 8: Parties desiring to send boxes of fruit to friends should take advantage of the low express rate now prevailing. It used to cost so much to send fruit by express that it would be cheaper to buy it at the other end of the line. But now a ten-pound box of fruit can be shipped to any point in California where there is a Wells-Fargo office for 35 cents; any point in Colorado, 45 cents; Arizona, 30 cents to 45 cents; Kansas, 47½ cents; New Mexico, 27 cents to 42 cents; Missouri, 47 cents to 52 cents, and other States in proportion. This gives an opportunity to send fruit at reasonable cost.

FRESNO.

GRAIN PROSPECTS.—Fresno Republican, May 10: The recent rains, which came at a time when they were most needed, have assured a heavy yield of grain throughout the county. In some places, and especially on the West Side, much wheat suffered before the rain came and much of it has not recovered the partial blight. This is particularly true of grain sown early in the fall which matured during the dry spell and in some sections was damaged by the late frost. In the West Side districts, where sandy soil predominates, it is estimated that the yield will be from three to six sacks to the acre. In the vicinity of Clovis wheat will average about nine sacks to the acre. This is also true of the country lying along the eastern foothills. Grain has attained a good growth, the heads are large and well filled and the stalks are healthy looking. In the district south of Fresno there never was a better prospect for crops. In the vicinity of Caruthers and Liberty the yield will be heavy. The same might be said of the Wildflower country. The rains, beneficial as they were, were not an unmitigated blessing. Many farmers had cut their hay. Hundreds of acres had been mown and shocked in the field when the downpour came and most of it was ruined. That the rain saved the grain crop, however, caused the farmers to rejoice in their misfortune. In some places rust has begun to manifest itself. So far as known it has confined itself to the leaves of the wheat and has not yet reached the stalk.

KINGS.

VINEYARD LEASED.—Hanford Sentinel, May 10: George West & Son have closed their contract with Page & Montague which gives them entire control of the Lucerne vineyard for the next five years. The Lucerne Co. have retained only the dryer, packing house and store, and S. S. Mullin will remain on the premises as a representative of the company.

LOS ANGELES.

ORANGES SETTING WELL.—Pomona Times, May 9: Oranges are setting finely for next year's crop. It is yet too early to say what the crop will be, but present promise is good.

SHIPPED MANY NAVELS.—San Antonio Fruit Exchange has had the management of about 750 cars of oranges, mostly Navel, this year. It now has only about sixty cars of Navel, which is probably more than half of all southern California's remaining output.

PRUNES AND PEACHES.—Prunes will be almost a total failure, from present indications. But few blossoms showed up and but few of them set. Peaches also are somewhat off, with a fear that the crop will be very light. The trees failed

to leaf out properly, fruit is scattering and some of it poor and stunted.

WATER IS VALUABLE.—Frank H. Massey and C. E. Stultz have sold their ten acres and pumping plant near La Verne to the Glendora-Azusa Water Co. The well passes through 136 feet of water gravel. The price paid is \$225 per miner's inch for the first 40 inches and \$200 per inch for each additional inch. At this time 65 inches are being pumped and Messrs. Massey & Stultz have still thirty days in which to increase the flow before the final measurement is made. The present flow would figure up to \$14,000.

NAPA.

FAIR DIRECTORS MEET.—Napa Register, May 11: At a meeting of the directors of the Napa Agricultural Association, it was decided to give a race meet and hold a pavilion exhibit in Napa, beginning July 9th and ending July 14th. The following committees were appointed: Pavilion—J. S. Taylor, Arthur Brown and Chas. Welti. Speed Programme—Arthur Brown, Ed. S. Bell and G. W. Berry. Advertising—D. S. Kyser, Ed. S. Bell and J. S. Taylor. Race Track—G. W. Strohl. The circuit is a large one this year. It opens in Santa Rosa on July 2nd, then comes to Napa, and then to Vallejo.

ORANGE.

CROP PROSPECTS.—Santa Ana Blade, May 11: As the days pass the benefits of the recent rains are becoming more plainly apparent, and farmers who three weeks ago were counting on having to buy seed are now assured that they will have grain in considerable quantity, and some hay to sell. Near the foothills the crops were never in such serious danger as those lying along the coast, and in such places it is estimated that an average crop will be harvested. On the Trabuca mesa Walter K. Robinson informs up that wheat will be a good crop, while feed was never so good at any time last year as it is now. In fact, there is more feed in that locality than cattle to eat it, for the shortage last year decimated the stock, and the number is less on the ranges now than for years.

ORANGE CARLOAD REGULATIONS.—At a recent meeting of the executive committee of the Fruit Growers', Shippers' & Buyers' Association the following car regulations for Valencia Lates and St. Michael varieties were formulated: Valencia Lates—A standard car shall consist of sizes 96s to 216s, inclusive. Sizes smaller than 216s and larger than 96s to be considered off sizes and invoiced at a reduction of 25 cents per box from the price for regular sizes. Paper Rind St. Michael—A standard car shall consist of sizes 126s to 300s, inclusive. Sizes 324s to 360s, inclusive, to be considered off sizes and invoiced at a reduction of 25 cents per box. Sizes smaller than 360s and larger than 126s to be considered off sizes and invoiced at a reduction of 50 cents per box from the price for regular sizes.

PLACER.

CHERRIES DAMAGED.—Newcastle, May 11: Rain is causing serious damage to the ripening crops of cherries, especially to the Black Tartarians, and thousands of boxes will be affected by it. Hundreds of pickers were laid off yesterday, and continuance of the damp conditions this morning indicates that picking can not be resumed until to-morrow, and not then unless the weather clears and the trees and fruit dry off. The result will be heavy losses caused by splitting, while the shipping quality of the remaining ripe fruit will be much impaired. Later varieties, such as Centennial, Royal Anne and Black Oregon, are probably uninjured.

RIVERSIDE.

AN OASIS IN THE DESERT.—San Bernardino Sun, May 11: Artesian water promises to make the desert around Indio a veritable garden. This is to be brought about by artesian water that flows abundantly and which appears to be of unlimited quantity. Mrs. P. B. Ware of Chicago has purchased several hundred acres, and is proceeding to develop its possibilities. Her first care was for water, and, after experimenting with large wells without results, she turned her attention to putting down a number of smaller wells with splendid success. These are from 2 to 3 inches in diameter and are put down by the hydraulic process. The first experimental well was sunk in this manner to a depth of 557 feet in twenty-four hours and a steady flow of water shoots up far above the mouth of the well, and, on adding a 20-foot pipe, the water went just as much above the top of that as the other. This well was sunk by Geo. Huntington, and he has a contract to put down fifteen more wells for Mrs. Ware. It is said that fruits ripen here earlier than in any other section of the State.

SAN BERNARDINO.

IRRIGATING SUGAR BEETS.—Chino Champion, May 11: Yesterday the American Beet Sugar Co. stopped its pumps and quit irrigating land for beet planting. Between 1000 and 1200 acres have been irrigated and planted to beets, and the young plants are making satisfactory progress. Irrigation appears to be so far a success on beets. The stand is perfect in almost all the fields, and the plants are making a vigorous growth. About 175 acres of the irrigated land yet remains to be planted, and since the late rain there will be some acreage planted on land which is now in good condition. The rain also assures a crop on the land which was planted early and which has not been irrigated at all. Further irrigation of the beets will depend upon the weather. The company is prepared to at any time start the pumps and run water upon the entire acreage planted.

WATER DEVELOPMENT.—Redlands Citrograph, May 12: Water development continues favorable in all directions. On Monday of this week the South Mountain Co. struck another stream in their main tunnel on the Birch ranch at Yucaipa, adding full 6 inches and increasing their flow to 25 inches. The tunnel is now in 600 feet and is being pushed ahead.

BIG FLOW OF WATER.—San Bernardino Sun, May 13: A flow of water was struck at 20 feet in a well being sunk by T. J. West that drove the men out in a rush, and the water caught them before they escaped to the surface. With J. S. Murphy he was sinking a 5-foot well casing and yesterday as the latter was picking in the bottom struck a stratum of rock and in a moment water came pouring through, filling the 5-foot well so rapidly that Murphy sprang for the ladder and started for the top. Before he did so the water was almost waist deep, and it kept rising on him as he climbed out. As soon as possible a centrifugal pump, with an 8 H. P. engine, was put to full capacity, but the water kept rising, although it was estimated the pump was throwing 75 inches, and at night the water was level with the top. For a few moments after it broke through the water was yellow, but it soon cleared and flowed clear as crystal. The well is close to many of the big gushers that have been struck within the year, but they averaged 500 feet in depth, while the mystery of this well is that it was but 20 feet below the surface that the flood was encountered.

SAN DIEGO.

INTEREST IN SILK.—San Diego Union: At the present time an unusual interest is being taken in silk culture, and if signs do not fail many cocoeneries will be started in the near future. A large number of inquiries are being received by Secretary Wood of the Chamber of Commerce concerning the industry, and people seem to be awakening to the fact that San Diego offers superior advantages in this particular.

ORANGE CROP.—San Diego Union, May 10: Orange shipments from this county are practically over for the year, the last full carload having been sent East several days ago. The output for the season is estimated at about 300 carloads. This is a little below last year's yield, but it was expected that the crop would be lighter on account of the lack of rain when the trees needed it the most. The prices during the season compared very favorably with those of last year.

SAN JOAQUIN.

BELGIAN HARE CLUB ORGANIZED.—Stockton Mail, May 12: The San Joaquin Valley Belgian Hare Club organized last evening, with J. W. Cavis president and B. E. Chappelow secretary. Frank Adams and E. E. Gross were appointed a committee to select rooms for the regular meetings of the club, and Frank Adams, M. J. Gardner and J. F. Hoerl were appointed a committee on constitution and by-laws.

FIRST SHIPMENT OF CHERRIES.—Lodi Sentinel, May 12: The first cherry shipment from Lodi this season, consisting of twenty-eight boxes, was sent Tuesday by the Producers' Co. The fruit was from the orchard of Carl Nelson of Acampo, consisting of Black Tartarians, and was excellent in size and flavor. The shipment was billed for New Orleans.

CHERRIES DAMAGED.—Lodi, May 12: Rain during the past week has played havoc with cherries in this section. Some growers say a large percentage of the crop is ruined for shipment, owing to the cherries cracking. This applies to early varieties, such as Black Tartarians. At any rate, cherry growers are blue over prospects, for a very large crop is on the trees.

RED WITH RUST.—Stockton Mail, May 11: W. G. Fisher, watchman of the Farmers' Union & Milling Co., returned

yesterday from a two weeks' camping trip to the mountains. He brought back some samples of very tall wheat and rye from the Eaton ranch, about 10 miles this side of Knight's Ferry. The wheat is fully 6 feet high and the rye about 7½ feet. It was grown in sandy soil, and Mr. Fisher said that it stood up quite even and made a fine appearance. Upon the ranch is an old lake bed of about forty acres, the soil being adobe. On this the grain will average 6 feet in height and much of it is higher. The leaves of the wheat which Mr. Fisher brought to this city are red with rust, and he declared that nearly all the grain from the foothills to a point about 10 miles from Stockton is damaged by rust. The blight has not yet reached the stalks, but it is believed that it will do so, and the farmers in that part of the country are in low spirits over the outlook.

SANTA CLARA.

ADDITION TO CANNERY.—Campbell Visitor, May 11: J. C. Ainsley expects to begin next week the erection of another galvanized iron warehouse 60x80 feet, joining the one he built last year.

FRUIT GROWERS' UNION.—Wednesday the annual meeting of the Campbell Fruit Growers' Union took place. The reports showed that the past year had been one of its best. All but five cars of fruit have been sold. The following were elected directors: G. C. Rodell, S. G. Rodeck, Captain Hamilton, W. P. Cragin and B. J. Moore. The board organized by electing Mr. Rodell president, Mr. Rodeck secretary, and Mr. Moore treasurer. The bank will be the depository.

DAIRY COWS TESTED.—San Jose Herald, May 14: In his monthly report, Veterinary Inspector Dr. H. A. Spencer states that 1400 cows, furnishing milk and cream to the inhabitants of San Jose, have been tested for tuberculosis and examined as to general health, with the very gratifying result of finding but 109 diseased, or a trifle less than 8%, against 20% for a like number during the investigations of 1897-98. Affidavits have been secured from the dairy people that they will not sell milk from untested cows nor permit diseased animals to associate with their herds.

YOLO.

ENGAGING IN STOCK RAISING.—Woodland Mail, May 8: There seems to be a general inclination in Yolo county among its land owners to engage more extensively in stock raising, and farmers are converting their farming lands into stock pastures. What is more important, all seem impressed with the idea of bettering their breeds and in most cases the new stock is blooded. For the past few years wheat raising has not been as profitable as it should be, and the thinking population has advocated diversified farming as a means of bettering conditions. Since the discovery of preventives of black leg, anthrax and bog cholera the business has become less hazardous. Among those who intend going into stock raising on an extensive scale is H. E. Coil. Mr. Coil has been adding to his herds and in every case has purchased thoroughbred stock. He will henceforth use only about 600 acres of his big ranch for growing wheat and feed, and the remainder will be devoted to stock. Lately Mr. Coil has purchased several bands of Shropshire sheep. He will increase his dairy herd and will deal extensively in hogs. All of his stock has been vaccinated and his ranch is in the finest condition. Mr. Coil says that while it costs a little more to stock with fine cattle it costs nothing more to feed them, and the profits more than compensate for the first extra expense. It is reported that several other farmers who own large tracts of land are contemplating a like change. The Woodland creamery is largely responsible for this movement as regards dairy herds. It is a fact that the value of a milch cow in this county has appreciated almost 100% in the past few years. W. B. Gibson & Sons have recently brought from Missouri a herd of fine Durham cows, which they have put on their ranch near Woodland.

Horse Owners! Use GOMBAULT'S



Caustic Balsam

A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

The Bachelor Girl.

One may laugh at the lovelorn and lonely old maids
And pity their husbandless state,
Since their hopes one by one they have tenderly laid
In the narrow graves fashioned by fate;
But the other, who loses not maidenhood's way
Of setting men's hearts in a whirl,
She is not an old maid, though she's thirty to-day;
She is simply a bachelor girl.

Distinguish between them, sure any one can,
'Tis not a mere matter of years;
The one places gayety under a ban
When the very first wrinkle appears;
The other keeps youth in her heart through the maze
And the daze of life's unceasing swirl,
And she wears not conventional spinsterhood grays,
So we call her the bachelor girl.

She's piquant and pretty, she's witty and wise,
Conversant with music and art,
And she looks on the world through her optimist eyes,
As more than a conscienceless mart,
Tea tipples and tabby cats both she to-boos,
That hall-mark of spinsters, the curl;
Oh! may her sweet presence the world never lose—
Hurrah for the bachelor girl!

—Munsey's Magazine.

Found Her for Keeps.

A tall girl in a tailor-made gown walked across the common one New Year's eve. It was growing dusky and lights were beginning to flash from the busy street, the rumble of which came faintly to her ears. The great, gaunt branches of the old trees lifted themselves heavily toward the gray sky, then fell back again, murmuring restlessly.

"How quiet it is here," the girl thought. "Almost like the country, and it is just a year ago to-night since I walked here with—"

Her head was lifted a trifle higher at this juncture of her thoughts, but those riotous thoughts which would get the better of her sometimes went on: "I wonder where he is this New Year's eve. I am here—in the same place, just like a woman. I would rather die than have him know it, but I wanted to walk here once before I buried the old dream forever. There!" gathering up her skirts energetically, "how silly to waste my thoughts over a man who has not one for me." * * *

A year ago Jack Morris had come from the south to attend college, and, meeting her at her aunt's house, where he happened to visit with a college chum, had presumed to fall in love with her. Many were the quiet walks and talks they had, and the girl learned to love the handsome southern youth very dearly. After their desperate flirtation had been carried on a month he had suddenly gone away without a word of explanation or farewell, and the girl, with unusual common sense, but with a great deal of bitterness, thought: "He fell in love so easily that he has fallen out again without hurting himself. He will never know how he has hurt me. You see," as if to convince herself and excuse him, "I was not used to the ways of men." * * *

She had reached the edge of the common, where the lights glared and the newsboys shouted out the evening's news in bold accents.

"I do not like the crowd," she thought, and, turning, walked back the way she had come.

A tall, athletic young fellow passed just as she turned away. He paused and peered after the graceful figure quickly disappearing in the dusk, then with a slight exclamation followed her.

"Molly," he called; but it was very deserted here, and if she heard him she did not heed.

"O Molly," She slackened her pace and looked inquiringly around.

"Aren't you going to speak, Molly?" he asked, when she stood silent in the pathway.

"Give me time, please," she said,

quietly; "this is rather a surprise, you know. How are you?" holding out her hand.

"I am very well, thank you," he said in a changed, quiet tone, and walked on silently beside her.

She strove once or twice to break the silence, but could find nothing to say. Then her native pride and frankness coming to her aid she said: "You went off rather suddenly."

He looked a trifle surprised, but answered coldly: "Yes, circumstances made it necessary."

"Ah, indeed; yet you might have taken the trouble to say good-by."

"I explained that in my letter. The letter which your aunt answered for you. I say, Molly"—breaking in upon her half uttered exclamation—"you might have been kind to a fellow when he was down. I thought—"

"Jack, listen! I don't know what you are talking about. My aunt answered a letter for me—when?"

"Why, last January, after I got the news that father's business had gone to smash. You see, he telegraphed and I had to go right off. I wrote a card on my way to the train saying that I was going and would write. I did and your aunt replied. But it is unnecessary to go over all this. You—"

She stopped short under the swaying branches and faced him. "Jaek, if she replied I knew nothing about it."

"You didn't, Molly! Then you didn't throw me over because you thought I was a pauper? But, by Jove! I bet you Mrs. Handel did. She is a mercenary old—excuse me, she is your aunt."

The girl was half crying in her distress and perplexity. "But I don't understand it all, Jack. Why should she interfere?"

"For reasons of her own which we will not bother about now. So you thought I was the faithless one, did you?"

"Yes." She would not compromise herself. "And I thought you were, and—it hurt me." "Did it?" very quietly. "Don't you care?" "For what?" "For me." A slight smile broke over her face. "Jack, you don't speak much like a pauper." "Nor am I. I waited until things looked brighter. Helped father all I could, then thought I'd come up and see if I could find Molly again. Have I found her—for keeps?"

"Yes, Jack, if you want her."—Boston Post.

The People Who Are Loved.

The people who win their way into the inmost recesses of others' hearts are not usually the most brilliant and gifted, but those who have sympathy, patience, self-forgetfulness, and that indefinable faculty of eliciting the better natures of others. Most of us know of persons who have appealed to us in this way. We have many friends who are more beautiful and gifted, but there is not one of them whose companionship we enjoy better than that of the plain-faced man or woman who never makes a witty or profound remark, but whose simple quality of human goodness makes up for every other deficiency. And if it ever came to a time of real stress, when we felt that we needed the support of real friendship, we should choose above all to go to this plain-faced man or woman, certain that we should find intelligent sympathy, a charitable construction of our position and difficulties, and a readiness to assist us beyond what we ought to take. If you could look into human hearts, you would be surprised at the faces they enshrine there, because beauty of spirit is more than beauty of face or form, and remarkable intellectual qualities are not to be compared with unaffected human goodness and sympathy.

PLAID frills of lace, mousseline de soie or of chiffon are employed to face the brim of large straw hats. These are broad brimmed shapes, which seem to need some facing of fluffy material to take away the stiffness of a flat, smooth straw expanse. If the brim be not excessively wide, the shape in its modifications may be adopted to the face of child, girl or woman.

The Bamboo Flute.

(Japanese.)

I hear from the shade of the fir trees
The fisher's flute again—
His importunate lamentations,
His passion and his pain.

Proud lords and lovely ladies
Met there in nights gone by,
While the summer moon was sailing
Like a pleasure boat on high.

The lords sang amorous ditties,
The ladies touched the lute,
Where, envious and envious,
The nightingale was mute.

They stole apart in the darkness,
And plighted hearts and hands,
Or, stilling songs with laughter,
Danced on the yellow sands.

There is more in the fisher's music,
Of passion and of pain,
Than he knows. And here at midnight
It comes to me again;

Comes back with a silent sorrow,
The weight of tears unshed,
The longing for vanished voices,
The loved, the lost—the dead!

—Richard Henry Stoddard, in the Century.

Handkerchiefs and Disease.

The dainty bit of cambrie that is carried more for show than for use is very harmless, but in the hands of one who is troubled with a cold or with an influenza this dainty article may become charged with elements of infection.

The prevalence of catarrh is alarming, and it is due to the careless use of the handkerchief as much as to any other one cause. One person may impart the trouble to other members of the family unless the handkerchiefs of the individual who is affected are kept to themselves and great care taken in their cleansing.

Children who are affected with a catarrhal trouble, should never be allowed to throw their handkerchiefs around carelessly, nor should these be put in with the general wash, for there is no better method of scattering tubercular germs.

Handkerchiefs should never be used until they are badly soiled, as it will then be necessary to rub them on the washboard. And for this reason they should not be too soiled to be washed by the owner in her own washbowl.

There are few articles that possess the power of kerosene for purifying and cleansing, and the handkerchiefs used by a person with catarrhal affection should be treated in the following manner:

Place them under water, in which several tablespoonfuls of kerosene have been poured, and let them remain over night. The oil tends to whiten them and will not injure the fabric in the least. The water must be poured off the next morning and unless they are badly soiled they will not need boiling. Prepare a basin of warm water; then pour in a little oil to make disinfection sure and wash the handkerchiefs between the hands in suds. Rinse them carefully through two waters and hang upon a line to dry.

The Model Wife.

A great deal has been said and written on the inferiority or inequality of woman as regards man's powers, remarked Rev. Alfred Kummer recently. Much of this is unscientific and wholly without reason. The lily and the oak have their respective places in nature and a comparison of the two is absurd. Man is decidedly superior in some capabilities and duties of life and women are superior in others. In the home man should not be considered more honored than the wife who walks by his side. Let them share alike and pass along life's journey both receiving the same recognition in the home circle.

Just here let me say a word in regard to the word "obey." In the marriage ritual the word is omitted except in the Episcopal ceremony, and yet there seems to be a tacit understanding in the other ceremonies which other ministers perform. I believe this should be so in the sense that the husband is the natural provider and protector of

the home, and this is certainly the divine will. There ought to be in the breast of man and wife the spirit of obeying, not of a prerogative or assertive authority, for there the separation of love starts; but the loving, unselfish recognition that husband and wife are one and to obey is the highest expression of love.

The model wife of a man is not his household companion alone but also his intellectual companion. In the intellectual race the wife is decidedly under a disadvantage with the man, who is out in active business life. He meets life in many phases and has his mind quickened and enlightened by the world about him. Now the model wife, realizing this, will use every effort to keep up with her husband and will know something about the things her husband has to contend with in life.

The model wife will not be content to lay aside her former accomplishments—arts, books, music—and become a household drudge. And so I plead with the women of the homes that they do not allow the aesthetic and intellectual fire on your hearthstone to go out, but that you shall always strive to know something of music, something of books and thus foster and feed your intellectual life.

There is a great difference in the homes of the people of the world. How you feel the sweet sunshine of some homes as you enter, while in other places we see much to the contrary. I have always pleaded for bright, attractive and cheerful homes and then the boys in the homes will not be attracted by beauty and glittering attraction in the haunts of sin.

Three things a model wife should not be, a scold, a sloven or a spendthrift. From such women in our homes may we be preserved. The new century is to be saved not by armies, but by the work of the sisters and mothers in the home.

Little Things.

It is the little things that count in life. In the household, in the daily expenditures of life and in the necessary buying for personal belongings which is every woman's lot, the large sum outlaid for an article of size does not eat into the hoard half as much as the dozen and one tiny articles which must be had, and which seem so little and insignificant by themselves that they are thought unworthy to be counted, but which end by making the entire sum laid out for the "sundries" vanish, and not infrequently take a good-sized slice out of some other division.

In the same way the "little things" are the very marks of that refinement which is desired by every woman as a characteristic. The gown may be elegant, the hat expensive, but the little details, a well-fitting shoe, a neat glove, the fresh ribbons or ruchings, and a small dainty pin to fasten the collar, all these things tell the invariable tale of delicate taste and a knowledge of the effect of dress which is the essence of style.

"I HAVE but one rule that I follow absolutely in this life, and that is to make other people as happy as possible."

"Well," he replied, "you ought to be gratified then at what I heard a young lady say the other day."

"What was that?"

"She said that whenever she saw you dancing she had to laugh."

GOOD CHARACTER is valuable capital for any young man. It is essential to complete success in life. There may be temporary prosperity in business, the professions or politics without it, but people finally put about the correct estimate on everybody. Then the dissemblers, the frauds and the fakirs go to the wall.

MRS. NEWBED (handing tramp several biscuits): "Here, my poor man, are some of my homemade biscuits. You will find the saw an ax in the woodshed." Tramp (closely examining the biscuits): "Are they as bad as that, mum?"

An Okanogan Nemesis.

The broad rays of the setting sun lingered on the yellow buttes, turning to gold the brown bunch grass and sagebrush on the river banks. The sky looked like some rare roses and blue tinted porcelain. The air was still with a mellow warmth, with now and then a hint of cool breezes from the Columbia's rushing tide. The great yellow peaches that hung thick on the trees of a ranch that stretched along the east bank of the river rivaled the color of oranges in the bright sun rays. In the yard, by the log barn, a weary, gray-haired woman was milking a small black "siwash" cow. "Seems as though he might get rested some time," she sighed as she looked across the garden patch to the house, where her husband sat in his rocking chair, reading a paper, under one of the pine trees that they had left in the yard for shade. Lorenzo Smithson was a tall angular man of perhaps forty-five years, who was perpetually resting—he called it—from what labor no one but himself knew. Mandy, his wife, devoted her time to caring for him and trying to be farmer and housekeeper at the same time.

She carried her brimming pail of milk to the house, strained it, and washed and put the pail away. She measured out a pan of flour and started to "set" the bread to raise for the next day, when she heard a sharp call of "Mandy! Mandy! you haven't shut the chicken house up, and there is a pesky coyote a running away with the old yellow hen! 'Pears to me you are mighty careless." Mandy ran out and shut the chickens up. Lorenzo greeted her return with: "You oughtn't to be so shiftless; that hen was a-laying right along, and eggs are 15 cents a dozen down to Wenatchee; besides it stirred me all up, an' I lost my place in the paper." Mandy meekly replied that she kind of forgot. She had milked the cow and got the kindling, fed the calf and pigs, besides washing the dishes since supper; seemed like she wasn't so spry as she used to be. "Well," Lorenzo answered, "you ought to take pattern after Widder Strongweller; she is a hummer, now, I tell you. Gets around lively, keeps two men to work, besides a woman; no slack doings there."

Mandy's tired blue eyes filled with tears as she turned to enter the house to finish her work. She thought of the pretty daughter who had been such a help and so much company a year ago. But young Faston had taken her, a bride, to his ranch up the Methow, and "Oh!" thought Mandy, "that dreadful rough country! Will I ever see Bessie again? Seems like she is a long way off." Mandy spent a restless night. The heat seemed stifling. Next morning she felt languid and had no appetite for the nice breakfast she called Lorenzo to. She plodded through her work, did her baking and drove to the landing with a load of peaches for the boat to take down the river to Wenatchee. It was ten o'clock before she reached home, and a strong wind was blowing the sand from the river shore, sending it in the clouds over everything. Mandy shook and dusted things to keep them neat for Lorenzo. Yet he grumbled and said he wished "she would be a little neater; things was all dusty." Somehow her head ached; she was tired at last, and after dinner laid down to rest. Before night she was in high fever, and kept fretting because she could not see to things for Lorenzo. He wandered around the house like a lost child. Everything went wrong, now that Mandy was sick. A kind neighbor did all she could for her. Yet in one short week Mandy had gone to rest.

When the funeral took place her friends gathered to pay their last respects. They spoke of her good heart and mild ways. One woman whispered to another that it was nothing in the world but hard work that killed her, anyway! She made a perfect baby of that great Lorenzo Smithson, a-waiting on him so!"

The minister from the lake had come

and they were all waiting for Lorenzo to make his appearance from upstairs. Finally, the minister, being an old friend, went up in search of him. He found Lorenzo seated on the edge of the bed, with his hair all rumpled over his head and his tie and collar in his hand. "Mr. Smithson," said the minister, "why do you not come down stairs? We are waiting for you."

Lorenzo answered: "'Pears like I can't; Mandy ain't here to fix me."

The sagebrush and bunch grass around Mandy's grave were green with returning spring when Widow Strongweller gave a big wedding party. She looked like a big cabbage rose in her white organdie, that she had sent to Seattle for, when she stood up with Lorenzo in the "front" room to be married, while his gray suit lent a becomingly subdued expression to his figure. After the wedding ceremony was performed a fine spread was served on long tables under the pines. They were laden with a typical "east-of-the-mountains" feast, such as you will only find in Okanogan county, Washington. The wedding took place at high noon, and as soon as the feast was over the bride and groom, with all the guests, drove up to Lake Chelan and spent a good part of the night in dancing in the hall at Lakeside. Next morning they all boarded the steamer Stehekin and went up the lake for a ride, stopping for lunch at Moore Point. After an absence of two or three days Mr. and Mrs. Smithson were home again by six o'clock in the evening. Phoebe Smithson was a go-ahead, independent woman, who could not bear to have any one "a-loppin' around reading," as she expressed it. So when they got home she told Lorenzo to change his clothes and start the fire in the kitchen, and then milk while she got supper. She said: "You know, I let Mary Ann stay over to the lake to visit her folks a spell, an' we can get along. And I won't keep but one man after this, seeing you are so spry. He will be here next week to harrow. Now, while I think of it, you best rent your ranch to that fellow from the Sound. I guess he wants to get dried out. Yes, an' we won't take any more papers than the Leader, Post-Intelligencer, and maybe a farm paper or a magazine. We won't have much time to read." Lorenzo answered: "Mandy always built the fire and milked." "Well," said Phoebe, "seeing she isn't here, I don't see any way but for you to do it yourself."

Lorenzo donned his blue overalls and reluctantly built the fire and then went out to the barn. Here he found plenty to do. Coming in he found a good supper on the table. Phoebe was leisurely stepping from the stove to the table, her substantial weight jarring the floor at every step. When the meal was over she handed Lorenzo the tea towel with the remark that he could make himself useful wiping the dishes. While at work he told Phoebe that he thought they ought to go visiting soon. "I've been wanting to visit my wife's folks this long time." "Whose folks?" said Phoebe. "Mandy's," he replied. "The what, Lorenzo?" "My wife's." "The whose?" exclaimed Phoebe. "The folks," merely replied Lorenzo. "That's more like it," said Phoebe. "You are my husband now and when the crops are in we will go visiting."

The summer had waned into fall, Lorenzo stood one morning leaning over the gate thinking how he used to rest and how Mandy had worked, although so quiet about it, and how little he had done to help her, when he was roused to action by the sound of his wife's voice. "Oh, Lor'! get a move on and hitch up the team; the corn fodder has to be got in and you must get the peaches down to the landing before the boat comes along. Hiack! now, I am going to see to packing more peaches for to-morrow." Lorenzo started briskly for the barn. "She is a hummer an' no mistake," he muttered. "Oh, land o' liberty, I am a goin' to go an' set a spell by Mandy's grave to-night after moon's up and rest!—Seattle Post-Intelligencer."

"Do people ever have corns anywhere except on their feet?" "Why, yes; farmers have corn in the ear."

DOMESTIC ECONOMY.

Domestic Hints.

PLAIN SPONGE CAKE.—Beat the yolks of three eggs, add one and one-half cups of granulated sugar, one teaspoon of lemon extract or one tablespoon of juice, and one-half cup of water. Add two level teaspoons of baking powder mixed with two cups of pastry flour, and the whites beaten stiff and thoroughly. Bake in a long, shallow pan, or in round pans if for cream cake or pies.

ROMAN PIE.—Cut up cold chicken and to each coffee cup of chicken use two ounces of previously cooked vermicelli, two ounces of grated Parmesan cheese, a teaspoonful of finely minced shallot and parsley, a saltspoon of salt, and less than half a pint of good, thick gravy. The ingredients should be put in a buttered pudding dish, lined with nice pastry and some broken-up vermicelli, then pack in the rest of the material and cover with pastry and bake. Serve with brown gravy.

DOUGHNUTS.—Rub a teaspoon of butter into a generous cup of sugar, add two unbeaten eggs and stir thoroughly; add one scant cup of milk. Mix four level teaspoons of baking powder in two cups of sifted flour, and stir into the mixture. Then add more flour till soft as can be rolled out, $\frac{1}{4}$ inch thick. Cut in rings and fry in clean, hot fat. Test the fat by dropping in a piece of the dough, which should rise at once to the top with a good deal of ebullition and begin to brown at once. Turn only once.

FISH CUTLETS.—Make a panada of one cup of milk, one tablespoonful of butter, three tablespoonfuls of flour, and one teaspoonful of salt. Cream the butter and flour. Heat the milk in a double boiler and add the butter and flour. Cook until thick, stirring constantly until it is smooth. Add the salt. Chop fine one can of salmon and add to the mixture. When it is very cold form into croquettes, flatten slightly and roll them in beaten egg and cracker crumbs. Fry them in deep fat. Serve hot with sauce tartare, which is a simple mayonnaise dressing, to which has been added chopped pickles and olives.

POACHED EGGS SERVED ON FISH CAKES.—Boil some potatoes, mash, then beat until light; season with salt, pepper, two tablespoonfuls of butter, one egg, beaten, or a little rich cream, to each pint of potatoes. Beat thoroughly with a perforated wooden spoon. Add an equal quantity of cold, cooked fish, flaked, two rounded tablespoonfuls of egg sauce, or a little butter. When thoroughly mixed shape into flat cakes. Fry nicely some slices of smoked shoulder and remove to soft paper to drain, first on one side and then on the other. Sauté the fish cakes in the hot fat in which the meat was cooked. Place a well-poached egg on top of each cake, with the small pieces or strips of shoulder between and parsley in the center.

Black Coffee; How to Make It.

At the average family table black or after-dinner coffee is simply the breakfast coffee served in small cups and handed around without cream. The object of a sip of clear coffee following a hearty meal is to provide a slight stimulant to the system, and for this purpose an infusion of the berry is better than a decoction. The French understand this, and in the simplest French home black coffee is perfectly made and offered after every dinner. The point to be insisted upon is that the water shall be boiling thoroughly at the time it is poured over the coffee. Black coffee, too, must be made in a French coffee pot, or at least the principle of this utensil must be preserved, and a filter provided through which the water may percolate over the ground coffee. It is not necessary, as often asserted, that to produce the perfect cup of black coffee the berry should be finely ground; ordinary grinding will suffice, but boiling water is a sine qua non. Allow a tablespoonful of ground

coffee to a cup and a pint of water to every four tablespoonfuls. Make it not more than five minutes before it is to be served.—New York Post.

Hints to Housekeepers.

To skim a sauce the expert cook will draw the saucepan to the side of the fire to stop the boiling, and add a teaspoonful of cold water, which promptly causes the grease to rise.

A few drops of alcohol mixed with a little olive oil in the proportion of two and one-half parts of oil to a half part of alcohol is a better mixture with which to rub polished tables than the plain oil. The alcohol cuts and takes off any grease, dust or trifling stain.

Women who are careful of their leather footwear have the linings of their fine shoes renewed as regularly as they would the linings of jackets that have become mussed. Any high-class shoemaker includes this relining in the work of his repairing department.

A good way is never to apply a liquid odor directly to an article of clothing, but keep sachet bags everywhere in the wardrobe. By this means, every article of clothing has a faint aroma, too subtle to be defined. Some women even make tiny sachets to sew on the sleeves at the underarm seam.

For a tasty, delicate relish that may be quickly prepared, nothing is nicer than sardines on toast. Drain off the oil, scrape off the skin and split them. Lay on a broiler upon a sheet of writing paper. When they are browned put them on strips of toast which have been buttered, and squeeze over them a few drops of lemon juice.

An excellent substitute for plum pudding is made as follows: One cupful of raisins, two cupfuls of bread crumbs, one pint of milk, butter the size of an egg, one egg, teaspoonful of cinnamon, one-half cup of molasses. Place in a baking dish and bake in a slow oven for about an hour, or until firm. Serve hot with the usual plum-pudding sauce.

For rhubarb jelly the stalks are cut and stewed gently until tender. To a quart of the rhubarb a pint of sugar and a little more than a half-box of gelatine are allowed. Soak the gelatine in a little cold water and add to the rhubarb while the latter is warm, rubbing the mixture through a sieve, pour into a mould and serve with whipped cream. While the stalks are young and tender, the rhubarb need not be peeled.

Too Much Salt.

The use of salt as a condiment is so general and so universally believed in as necessary that we rarely hear a word against its excessive use, but there is a multitude of persons who eat far too much salt—eat it on everything, on meat, fish, potatoes, melons, in butter, on tomatoes, turnip and squash, in bread and in a host of foods too numerous to mention. To so great an extent is it used that no food is relished which has not a salty taste, and this hides more or less the real taste, which is often very delicate. Now, the amount of salt required in the system is comparatively small, and if the diet has been rightly compounded very little is necessary. What are some of the evils of the excessive use of salt? The effect is to paralyze the nerves of taste, or pervert them so they cannot enjoy a thing which has not a salty flavor, and in addition there is a direct tax on both the skin and kidneys in removing it from the blood. Whether the skin is harmed by the tax we do not know. Possibly it is not greatly injured, yet we know that few people possess a healthy skin; but it is now pretty well settled that an excessive use of salt does overtax the kidneys in its removal, and that cases of derangement and disease of these organs are due to this use. We advise our readers and others to look into this matter, and to try to diminish the excessive use of this condiment. We believe they will be better for it.—The Clinic.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, May 16, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	65 1/2 @ 65 1/4	67 1/4 @ 67 1/2
Thursday.....	65 1/2 @ 65 1/4	67 1/4 @ 66 1/2
Friday.....	65 1/2 @ 64 1/2	67 1/4 @ 65 1/2
Saturday.....	63 1/2 @ 64 1/2	66 1/2 @ 65 1/2
Monday.....	64 1/2 @ 65 1/2	65 1/2 @ 66 1/2
Tuesday.....	65 1/2 @ 64 1/2	66 1/2 @ 66 1/2

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday.....	5s 8 1/2 d	5s 8 1/2 d
Thursday.....	5s 8 1/2 d	5s 8 1/2 d
Friday.....	5s 8 d	5s 7 1/2 d
Saturday.....	5s 7 1/2 d	5s 7 1/2 d
Monday.....	5s 8 d	5s 7 1/2 d
Tuesday.....	5s 8 d	5s 7 1/2 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	— @ —	1 00 3/4 @ 1 00 1/2
Friday.....	92 @ —	1 00 3/4 @ 99 1/2
Saturday.....	90 1/2 @ —	99 1/2 @ 99 1/2
Monday.....	— @ —	99 1/2 @ 1 00
Tuesday.....	— @ —	1 00 1/4 @ 99 1/2
Wednesday.....	— @ —	1 00 1/4 @ 1 00 1/4

WHEAT.

Prices for both spot wheat and futures have suffered further declines during the week under review, the depression being attributed to prospects of a larger crop in this country and Europe than was estimated a month ago. In connection with above, there was an exceedingly slim export demand, and this naturally had a depressing effect. Aside from a steamer shipment of 2800 tons to Peru and Chile, there have been three cargoes of wheat cleared from this port thus far this month. This is a little ahead of the movement for corresponding period last year, which was far below the average. New wheat has already arrived, a carload having been landed at Port Costa on Friday last from the ranch of J. M. and O. B. Kimberlin in Kern county. This ranch has been first on market with wheat quite frequently during the past ten or fifteen years. Last Friday's new wheat brought 92 1/2c, but the quality was not first-class. The visible supply of wheat East of the Rockies showed the past week a decrease of 2,204,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 90 1/2c.—c.
December, 1900, delivery, 98 1/2c @ \$1.00 1/2.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at —@—c; December, 1900, \$1.00 1/2 @ 1.00 1/4.

California Milling.....	95 @ 1 00
Cal. No. 1 shipping, alongside.....	90 @ 92 1/2
Oregon Valley.....	90 @ 95
Walla Walla Blue Stem.....	95 @ 1 00
Walla Walla Club.....	85 @ 95
Off qualities wheat.....	82 1/2 @ 87 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	65 3/4 @ 65 1/2	65 3/4 @ 65 3/4
Freight rates.....	25c—s	—@0s
Local market.....	\$1 06 1/4 @ 1 08 1/2	90 @ 93 1/2c

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

There is naturally a weak flour market, in sympathy with wheat, although the product of Oregon and Washington, as well as most other outside points, is not being offered relatively so low as ordinarily, compared with the price of the local product, the values of wheat at most of the points in question being just now in favor of the San Francisco millers

Superfine, lower grades.....	\$2 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

While values in the spot or sample market have not declined to any marked degree since last review, the tendency has been to lower values, mainly owing to the crop promising better than was thought possible a few weeks ago. Weakness was most pronounced in the speculative market for future deliveries of new, No. 1 feed, Dec., selling down to 71c, against 76c last week. It does not follow, of course,

that barley will be this low next December because speculative operators now think so.

Feed, No. 1 to choice.....	72 1/2 @ 75
Feed, fair to good.....	67 1/2 @ 71 1/2
Brewing, No. 1 to choice.....	85 @ 95
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

Trade in this cereal is not brisk, but when compared with the movement in other grain, the business doing in oats makes a very satisfactory showing. Values are being as a rule well sustained at previously quoted range, more especially for colored descriptions, these continuing to receive the most inquiry for feed purposes, affording to buyers the most value at the prevailing rates.

White Oats, fancy feed.....	1 23 1/4 @ 1 25
White, good to choice.....	1 12 1/4 @ 1 20
White, poor to fair.....	1 05 @ 1 10
Gray, common to choice.....	1 07 1/2 @ 1 15
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	95 @ 1 07 1/2
Red.....	95 @ 1 17 1/2

CORN.

Much the same conditions as last noted are still prevailing in the market for this cereal. Spot supplies of Large Yellow are too light to admit of wholesale operations. Small Yellow is in few hands and stiffly held. Large White is offering in more than sufficient quantity for the immediate demand for this variety, enabling buyers to operate to advantage.

Large White, good to choice.....	1 05 @ 1 07 1/2
Large Yellow.....	1 15 @ 1 17 1/2
Small Yellow.....	1 40 @ 1 50
Eastern, in bulk (carload lots).....	1 10 @ 1 12 1/2

RYE.

Not much coming forward, nor are spot supplies large. Market is moderately firm at current rates.

Good to choice, new.....	97 1/2 @ 1 02 1/2
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BUCKWHEAT.

Market is inactive, with supplies and demand both lacking. Quotable values remain nominally as before.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

Values for all varieties of beans remain virtually as last quoted, and there is nothing at present to indicate that there will be any special fluctuations, either upward or downward, in the near future. Spot stocks are of quite moderate volume and are mostly in second hands. Business at present is principally of a light jobbing character, but as there is no disposition to crowd offerings upon buyers, there is no weakness observable.

Pea, fair to good, 100 lbs.....	3 35 @ 3 50
Small White, good to choice.....	3 35 @ 3 50
Lady Washington.....	3 15 @ 3 25
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 70 @ 2 90
Bayos, good to choice.....	3 15 @ 3 35
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 25 @ 5 35
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

Recent advices by mail from New York City give the following review of the bean market, prices quoted being per 60-lb bushel:

Exporters have not increased their purchases, and if the jobbing trade has been any better of late it was so slight as to be hardly appreciated. Marrow have had rather an unsatisfactory demand and former prices were barely maintained; a considerable part of the business was at \$2.12 1/2 for average best goods, but a few lots of reasonably good color and large size have jobbed at \$2.15. Possibly Medium have sold a trifle better, generally at \$2.15, though a car or two were closed out at \$2.12 1/2. Choice Pea have advanced 5c, not because of any special activity to trade, but owing to the fact that stock has been scarce; at the close best barrel lots are firm at \$2.25, with some fine Canadian bags going at \$2.22 1/2. Exporters have taken some Red Kidney during the past week, mostly at \$3.07 1/2 f. o. b., but the outlet has not been large enough to give the relief that was needed, and the market is now weak, with indications that best goods can be bought at \$2.05. Very little interest in White Kidney. Yellow Eye neglected, and there is no call for Turtle Soup. Lima are just a shade easier, now quoted \$5.62 1/2 @ 3.55, but Giants are cleaning up closely and are firmly held. Over 6745 bags foreign beans in this week, including 5320 bags from Fiume on the steamer Betsy. Imported Pea have had a good demand, mostly at \$1.95 @ 2, and a fairly satisfactory trade has been accomplished in Medium at about former rates; the quality is quite irregular and this makes a wide range; some very inferior lots have gone down to \$1.25 @ 1.30, but

good to prime sold largely at \$1.75 @ 1.85, with some fancy Italian up to \$1.95. Green and Scotch peas have shown further slight decline.

DRIED PEAS.

With no Green or Niles Peas offering from first hands, and only very moderate supplies held by jobbers and millers, values in wholesale market are not well defined. Quotations remain unchanged.

Green Peas, California.....	2 20 @ 2 35
Niles Peas.....	2 00 @ 2 25

WOOL.

In the way of sales there is nothing of consequence to report, but some buyers have been doing a little sampling in this center, and others have gone to Oregon, evidently on business bent. There is reason to believe that there will be fair movement in wools at an early day, but it is doubtful if prices realized will be as satisfactory as anticipated. Foreign markets have been lately displaying weakness. Manufacturers are postponing buying as much as possible, and are doubtless somewhat anxious about results of the Presidential campaign soon to open.

SPRING.

Humboldt and Mendocino.....	30 @ 22
Northern, free.....	16 @ 17
Northern, defective.....	13 @ 15
Middle Counties, free.....	15 @ 17
Middle Counties, defective.....	13 @ 15
Southern Mountain, 12 mos.....	11 @ 13
Southern Mountain, free, 7 mos.....	12 @ 15
Southern Mountain, defective, 7 mos.....	10 @ 12
Oregon Valley, fine.....	20 @ 21
Oregon Valley, medium and coarse.....	19 @ 20
Eastern Oregon, choice.....	17 @ 18
Eastern Oregon, fair to good.....	12 @ 16
Nevada, as to condition.....	15 @ 17

HOPS.

Although offerings from first hands are not what can be termed heavy, there are considerably more than custom can be found for. Only fancy qualities are inquired for, and these are not obtainable in anything like a wholesale way. If fancy were as plentiful as common to medium grades, it is doubtful if they would be sought after at other than unprofitably low figures for the producers. It is reported that Oregon growers have combined and agreed to reduce their acreage about 25%.

Good to choice, 1899 crop.....	6 @ 9
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The following report of the hop market is from a New York authority, coming through by mail of recent date:

The very small amount of business that has been passing of late has turned the attention of the trade to the condition of the hop yards of the country, the prospects of this season's crop and a closer calculation of the quantity of stock still remaining in growers' hands unsold. The best information that has come to hand from Oregon leads to the belief that only 13,000 to 14,000 bales are left in that State, and the holdings in Washington and California will not bring the total for the Pacific coast above 20,000 bales. The stock of 1899 hops back in this State may not exceed 3000 bales—they are scattered over several counties, but some sections, as, for instance, the Waterville district, are practically cleaned. Work in the yards has been going on rapidly this week, and it is generally conceded that the roots have wintered well. While there seems to be very little demand this spring for roots, we do not hear of much plowing up of yards. For a week or two our local brewers have been busy attending to licenses, and they have shown no disposition to trade, hence a continuation of the dull features noted for some time past. There is a feeling that business may revive somewhat with warmer weather, but the local stocks, particularly of Pacific coast hops, are ample and the tone of values is barely steady.

HAY AND STRAW.

Not much new hay has yet arrived, nor is there any special inducement to forward it freely to market at present. Old is still being offered in fairly liberal quantity, as compared with immediate necessities, and buyers are able to operate to fully as good advantage as for some time past. Some sales of fancy Wheat hay are made above quotations, but with this exception the market shows no firmness. Straw is offering at reduced rates, with demand light.

Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 00 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 00 @ 7 00
Stock.....	5 00 @ 6 00
Compressed.....	6 50 @ 9 50
Straw, 1/2 bale.....	25 @ 37 1/2

MILLSTUFFS.

Bran was in reduced supply, and was quotably firmer, but inquiry was rather light. Middlings were offering at unchanged rates, with stocks ample for demand. Shorts were in fair supply and tendency of market was in favor of buyers. Market for Rolled Barley presented

an easier tone. Milled Corn was held close to last quoted rates.

Bran, 1/2 ton.....	12 00 @ 12 50
Middlings.....	15 00 @ 18 00
Shorts, Oregon.....	13 00 @ 15 00
Barley, Rolled.....	16 00 @ 18 50
Cornmeal.....	23 50 @ 24 00
Cracked Corn.....	24 50 @ 25 00

SEEDS.

One lot of 526 sacks Mustard seed arrived from the Lompoc section, but it had been previously placed, and was practically only in transit. Market for Mustard seed continues to show firmness. In other seeds trade is of a light order and values nominally as previously noted.

	Per ctt.
Mustard, Trieste.....	3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25
	Per lb.
Canary.....	3 1/2 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	— @ —

BAGS AND BAGGING.

The same conditions prevail in the Grain Bag market as before stated, with practically nothing doing at the moment, and only asking figures upon which to base quotations. The season's demand for Wool Sacks is about ended. In market for Fruit Sacks, Bean Bags or Potato Gunnies, there is nothing new to report.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 1/4 @ 6 1/2
San Francisco Grain Bags, 22x30, spot.....	6 1/4 @ 6 1/2
State Prison Bags, 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/4
Fruit Sacks, cotton.....	6 1/4 @ 7 1/4

HIDES, PELTS AND TALLOW.

Dry Hides continue to meet with a fair demand at prevailing rates for shipment East, but for Wet Salted Stock the market is slow and lacks firmness. Pelts are not receiving much attention. Tallow market is quiet.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10	9
Medium Steers, 48 to 56 lbs.....	9	8
Light Steers, under 48 lbs.....	9	8
Heavy Cow Hides, over 50 lbs.....	9	8
Light Cow Hides, under 50 lbs.....	9	8
Wet Salted Kip.....	9	8
Wet Salted Veal.....	9	8
Wet Salted Calf.....	10	9
Dry Hides.....	18	15
Dry Kip and Veal, 11 to 16 lbs.....	17	13
Dry Calf, under 4 lbs.....	20	16
Salted Horse Hides, large.....	2 50	@ —
Salted Horse Hides, medium.....	2 00	@ —
Salted Horse Hides, small.....	1 00	@ —
Dry Horse Hides, large.....	2 00	@ —
Dry Horse Hides, small.....	75	@ 1 00
Dry Colts' Hides.....	50	@ 75
Pelts, long wool, $\frac{1}{2}$ skin.....	1 00	@ 1 25
Pelts, medium, $\frac{1}{2}$ skin.....	70	@ 90
Pelts, short wool, $\frac{1}{2}$ skin.....	35	@ 60
Pelts, shealing, $\frac{1}{2}$ skin.....	20	@ 35
Deer Skins, best summer.....	27½	@ 30
Deer Skins, good medium.....	20	@ 22½
Deer Skins, thin winter.....	—	@ 10
Elk Hides.....	10	@ 12
Tallow, good quality.....	5	@ 5½
Tallow, No. 2.....	4½	@ 4¾
Goat Skins, perfect.....	30	@ 37½
Goat Skins, damaged.....	10	@ 20
Kid Skins.....	5	@ 10

HONEY.

There are no stocks of noteworthy volume now on the market, either new or old. There is so little rather than values are for the time being rather poorly defined, especially wholesale figures for new. Present quotations are based mainly on jobbing prices for remaining supplies of 1899 product.

Extracted, White Liquid.....	7 1/2 @ 8
Extracted, Light Amber.....	7 @ 7 1/2
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	11 1/2 @ 12 1/2
Amber Comb.....	8 @ 10

BEEFWAX.

Moderate shipments were made the past week to Europe. More would go forward if it were obtainable at current rates.

Good to choice, light, 1/2 lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Market for Beef was without special change, ruling quiet at former quotations. Veal continued in slim supply and market for choice small ruled firm. Mutton and Lamb went at fully as easy figures as last quoted. Tendency on Hogs was to lower prices, but market was still above packers' views.

Beef, first quality, dressed, net 1/2 lb.....	6 @ 6 1/2
Beef, second quality.....	6 @ —
Beef, third quality.....	5 @ 5 1/2
Mutton—ewes, 6 @ 70; wetters.....	6 @ 7 1/2
Hogs, bard grain fed, medium.....	5 1/2 @ 5 3/4

Hogs, small, fat.....	5½ @ 5½
Hogs, large, hard.....	5½ @ 5½
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ 5½
Hogs, country dressed.....	6 @ 6½
Veal, small, # lb.....	7 @ 9½
Veal, large, # lb.....	7 @ 8½
Lamb, spring, # lb.....	8 @ 8½

POULTRY.

Arrivals of California poultry were not very heavy, but in connection with tolerably free receipts of Eastern, there was enough to impart a weak tone to the market for all but strictly choice, extra large and fat young fowls, this latter sort being in limited supply and in good request.

Turkeys, dressed, # lb.....	— @ —
Turkeys, live hens, # lb.....	12 @ 13
Turkeys, live gobblers, # lb.....	11 @ 12
Hens, California, # dozen.....	4 00 @ 5 00
Roosters, old.....	4 25 @ 4 50
Roosters, young (full-grown).....	5 50 @ 6 50
Fryers.....	4 50 @ 5 00
Broilers, large.....	3 50 @ 4 00
Broilers, small.....	2 00 @ 3 00
Ducks, old, # dozen.....	4 50 @ 5 00
Ducks, young, # dozen.....	5 50 @ 6 00
Geese, # pair.....	1 50 @ 1 75
Goslings, # pair.....	1 50 @ 1 75
Pigeons, old, # dozen.....	1 75 @ 2 00
Pigeons, young.....	1 75 @ 2 00

BUTTER.

Tendency was to a wider range of prices, with market firm at quotations for choice to select fresh, but easy for fair to medium grades. The easier feeling for latter sorts was due to less active demand on packing account.

Creamery, extras, # lb.....	18 @ —
Creamery, firsts.....	17½ @ —
Creamery, seconds.....	17 @ —
Dairy, select.....	17 @ —
Dairy, seconds.....	16 @ 16½
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 15
Creamery in tubs.....	18 @ 19
Pickled Roll.....	— @ —
Firkin, California, choice to select.....	18 @ 19
Firkin, common to fair.....	16 @ 17

CHEESE.

For desirable qualities there continues to be a good demand, both for shipment and on local account. Young Americas have been in better request than flats and have been selling to best advantage. Previous quotations remain in force, with market firm at these figures.

California, fancy flat, new.....	8 @ 8½
California, good to choice.....	7½ @ 8
California, fair to good.....	7 @ 7½
California Cheddar.....	— @ —
California, "Young Americas".....	7½ @ 8

EGGS.

Market showed much the same quiet condition and absence of firmness as during preceding week. The speculative demand is much lighter than it was a few weeks ago, and with Eastern eggs arriving and offering in fairly liberal amount, no large quantities of the home product are required to satisfy the immediate inquiry. For other than extra large and in every way select eggs the market was slow and weak.

California, select, large, white and fresh.....	16½ @ —
California, select, irregular color & size.....	15 @ 16
California, good to choice store.....	13½ @ 14½
Eastern, as to section and grading.....	15 @ 16
Eastern, cold storage.....	— @ —

VEGETABLES.

Onion market showed a little more steadiness for New Red than previous week, demand being about equal to the supplies. Inquiry for Asparagus was on the decrease, and market was easier. Egg Plant was in light supply, and salable to advantage. String and Wax Beans sold at a decided decline. Tendency of values on most other vegetables in season was to easier figures than had been ruling.

Asparagus, # box.....	50 @ 1 75
Beans, String, # lb.....	3 @ 4
Beans, Wax, # lb.....	3½ @ 4½
Cabbage, choice garden, # 100.....	40 @ —
Cauliflower, # dozen.....	50 @ —
Cucumbers, # box.....	1 50 @ 2 00
Egg Plant, # lb.....	10 @ 12½
Garlic, # lb.....	— @ —
Onions, Red, Cal., good to choice.....	75 @ 1 00
Onions, Oregon, # cental.....	— @ —
Peas, Sweet, garden, # lb.....	2½ @ 3
Peas, Green, # sack.....	75 @ 1 25
Peppers, Green Chile, # lb.....	7 @ 10
Peppers, Bell, # lb.....	— @ —
Rhubarb, # box.....	50 @ 1 00
Squash, Summer, # box.....	1 00 @ 1 25
Tomatoes, Southern, # box.....	1 25 @ 1 75
Tomatoes, Bay, # box.....	— @ —

POTATOES.

Old potatoes were not in heavy receipt, but demand was slow and they went at lower average prices than last quoted. New potatoes were in increased supply and were offered at easier rates, with prospects of the market in the near future being still more in favor of buyers. Some of the New now arriving are showing very good quality.

Burbanks, River, # cental.....	40 @ 75
Burbanks, Bay counties, # cental.....	50 @ 75
Burbanks, Humboldt.....	— @ —
Burbanks, Oregon.....	50 @ 75
River Reds.....	— @ —

Early Rose.....	— @ —
Garnet Chile.....	— @ —
New Potatoes, # cental.....	70 @ 1 20
Sweet, River, # cental.....	— @ —
Sweet, Merced.....	— @ —

The Fruit Market.

FRESH FRUITS.

Several additions have been made this week to the list of fresh fruits, prominent among them being Peaches from Vacaville, Apricots from Vacaville and from Arizona and Logan Berries from Santa Cruz. As is usual with first consignments, good prices were realized. Cherry Plums put in an appearance, but were mostly too green to be sought after. A few early Apples arrived, but they did not present a very inviting aspect, and received attention more on account of their rarity than through actual merit. Cherries were in heavy supply, a large proportion showing damage from rain, causing prices to rule irregular and in the main low. Blackberries and Raspberries were in moderate receipt, choice of both kinds meeting with good custom and selling to fair advantage. Strawberries in prime to choice condition brought nearly as good figures as preceding week, but receipts were heavier.

Apples, fancy, 4-tier box.....	— @ —
Apples, good to choice, # 50-lb box.....	— @ —
Apples, common to fair, # 50-lb box.....	— @ —
Apricots, Pringle, # box.....	75 @ 1 25
Cherries, Black Tartarian, # box.....	40 @ 75
Cherries, White and Red, # box.....	25 @ 40
Gooseberries, common, # lb.....	2½ @ 3½
Gooseberries, English, # lb.....	6 @ 8
Raspberries, # chest.....	10 00 @ 13 00
Raspberries, # crate.....	75 @ 1 25
Blackberries, # crate.....	1 00 @ 1 25
Currents, Red, # chest.....	5 00 @ 6 00
Strawberries, Longworth, # chest.....	7 00 @ 9 00
Strawberries, Large, # chest.....	4 50 @ 6 00

DRIED FRUITS.

In the market for cured and evaporated fruits, the main feature is the contracting or efforts to contract new Apricots for forward delivery. While there are some transfers being effected in this line, there is considerably more talk than business. Transactions thus far reported have been mainly at 7@7½c for good to choice 'cots in sacks at primary points to be delivered latter part of July or early in August. There are some being offered in sweat boxes at 6½@7c, time of delivery being same as above noted, the lower figure being mainly for San Joaquin valley product. Last year's 'cots are now nearly out of stock, and business doing in them at current rates is wholly of a small jobbing character. Other dried fruits of 1899 curing are offering at generally unchanged prices, with market easy in tone, holders anxious to reduce stocks, and concessions to buyers are granted rather than miss sales, especially where desirable transfers or business of noteworthy proportions is under consideration. The prospect for a clean-up of Apples appears poorer than for any other fruit, stocks of this variety being rather heavy for this date, with very little outlet. That there will be many Peaches carried over is not likely, although offerings are still fairly liberal and the market favorable to buyers. Prunes of medium sizes, the only kinds now obtainable in noteworthy quantity, are moving in a moderate way at practically unchanged values. A fair clean-up of this fruit is looked for, although the market cannot be said to display any firmness. Figs are obtainable at decidedly easy figures, with transfers mainly the result of selling pressure. Pears and Plums are in too light stock to necessitate making any great cuts in prices on these varieties.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb.....	10 @ 11
Apricots, Royal, fancy.....	11 @ 12
Apricots, Moorpark.....	13 @ 15
Apples, in 50-lb boxes, rings, pressed, fancy.....	6 @ 6½
Apples, 50-lb boxes, rings, pressed, good to choice.....	5 @ 5½
Figs, White, fancy pressed.....	5½ @ 6½
Peaches, unpeeled, good to choice.....	4½ @ 5
Peaches, unpeeled, fancy.....	6½ @ 7½
Peaches, peeled, in boxes.....	12 @ 15
Pears, unpeeled Bartlett's, halved, fancy.....	9 @ 9½
Pears, halved, unpeeled Bartlett's.....	6½ @ 7½
Pears, quartered, unpeeled Bartlett's.....	6½ @ 7½
Plums, Black, pitted.....	6½ @ 7½
Plums, White and Red.....	7 @ 8
Prunes, in sacks 40-50s.....	3½ @ 4
50-60s.....	3½ @ 3½
60-70s.....	3 @ 3½
70-80s.....	2½ @ 3
Prunes in boxes, ¼ c higher for 25-lb boxes, ¼ c higher for 50-lb boxes.....	— @ —
4 sizes Santa Claras and equal.....	— @ —
4 sizes San Joaquin and Northern.....	— @ —
Prunes, Silver.....	4 @ 6

COMMON SUN-DRIED.

Apples, sliced.....	3 @ 4
Apples, quartered.....	3½ @ 4½
Figs, Black.....	2 @ 3
Figs, White.....	3 @ 3½
Peaches, unpeeled.....	3 @ 4

Advices by mail of late date from New York City furnish the following resume of the dried fruit market:

Evaporated apples have met an active

demand, mainly for export, and prime have ruled firm at 6c, with holders generally asking that figure. Choice quiet, but fancy have a good jobbing demand at full prices. Grades under prime receive little attention. Sun-dried sliced apples continue dull and weak, but quarters steady though quiet. Chops have had a fair inquiry and choice heavy packed have occasionally reached \$1.55, but \$1.50 generally top, with ordinary or poor dragging at lower figures. Cores and skins have ruled firmer, with choice generally held at \$1, though a car of fancy sold at \$1.12½; poor stock is urged for sale at low and irregular figures, some sales having been made as low as 40¢@50¢. Raspberries more active and firmer, with 15c generally asked at the close. Cherries in light supply. No blackberries or huckleberries left. California fruit quiet and without material change. Small prunes have been pretty well cleaned up; 40s command 5½@5½c generally, with prices ranging up to 7c for desirable 30s.

Apricots, Cal, Moorpark, 1899, # lb.....	14 @ 16
Apricots, Cal, Royal, 1899, # lb.....	12½ @ 13½
Peaches, Cal, 1899, peeled, # lb.....	16 @ 20
Peaches, Cal, 1899, unpeeled, in bxs, # lb.....	7½ @ 9
Peaches, Cal, 1899, unpeeled, in bags, # lb.....	7 @ 9
Prunes, Cal, 1899, # lb.....	3½ @ 7

RAISINS.

Business in this department is flat at the moment, as is to be expected at this time of year. There is no guide to values at present, quotations being wholly nominal and representing prices ruling early in the season, when raisins were in demand. Prospects are that the coming crop will be disposed of after much the same system as in vogue the past season.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, # box.....	1 60 @ —
do do 2-crown, # box.....	1 50 @ —
Valencia Layers, # 20-lb box.....	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6½ @ —
Loose Muscatel, seedless.....	5 @ —
Pacifics.—2-crown loose Muscatel, 5½c; 3-crown, 6c; 4-crown, 6½c; seedless, 4½c.	
Oriental.—2-crown loose Muscatel, 4½c; 3-crown, 5½c; 4-crown, 6c.	

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, # lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, # lb., 8½c; choice, 7½c; standard, 6½c; prime, 5c. Unbleached, 5c.

Loose Valencia.—Fancy, # lb., 5½c; choice, 4½c; standard, 3½c.

Valencia Clusters.—Fancy, # lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Orange market was not heavily stocked, but with demand slow the supply of common to medium grades was more than ample for the requirements. High grade oranges, more especially select Navels, were not plentiful, and for fruit of this sort the market was moderately firm. Lemon market was without special change, the demand being only fair at previous range of values, and common qualities difficult to place at the low figures quoted for the same. Mexican Limes were offered at fully as easy rates as were current the preceding week.

Oranges—Navels, fancy # box.....	2 50 @ 3 00
Navels, good to choice.....	1 50 @ 2 00
Navels, common to fair.....	1 00 @ 1 50
St. Michaels.....	1 00 @ 2 00
Mediterranean Sweet.....	1 00 @ 2 00
California Seedlings.....	65 @ 1 75
Lemons—California, select, # box.....	2 25 @ 2 50
California, good to choice.....	1 50 @ 2 00
California, common to fair.....	1 00 @ 1 25
Limes—Mexican, # box.....	4 00 @ 4 50
California, small box.....	50 @ 1 00

NUTS.

The same inactivity is prevailing in this line as previously noted, with values for most kinds very poorly defined. There is little or no opportunity for any noteworthy business in spot stocks of either Almonds or Walnuts, as there are few now offering. That coming crop of Almonds will meet with a good market seems now quite probable. Peanuts continue in scanty stock, with market firm, and business in the main necessarily confined to small transactions.

California Almonds, shelled.....	14 @ 17
California Almonds, paper shell, # lb.....	10 @ 12
California Almonds, soft shell.....	8 @ 9
California Almonds, hard shell.....	4 @ 5
Walnuts, White, soft shell.....	9 @ 10
Walnuts, White, California, standard.....	7 @ 8
Chestnuts, California Italian.....	8 @ 10
Peanuts, California, fair to prime.....	5 @ 6
Peanuts, Eastern, hand-picked.....	6 @ 6½
Pine Nuts.....	5 @ 6

WINE.

Market is quiet and presents much the same easy tone as for some time past. New dry wines remain quotable at 14¢@16¢ per gallon, the lower figure being realized at producing points for choice Northern, while for ordinary Southern, 14¢ per gallon, San Francisco delivery, is a full quotable figure. Dealers are receiving considerable wine which is being delivered on contracts made last summer and fall, and on this account are placed in a rather independent position, refusing in most in-

stances to take immediate offerings unless they can secure them on favorable terms. There are new dry wines held up to 20¢ per gallon by growers, but this figure is not obtainable in a regular way.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks.....	125,617	5,623,477
Wheat, centals.....	90,053	5,968,103
Barley, centals.....	43,150	4,834,923
Oats, centals.....	12,180	724,449
Corn, centals.....	5,245	128,751
Rye, centals.....	290	96,742
Beans, sacks.....	1,649	354,283
Potatoes, sacks.....	21,790	1,131,067
Onions, sacks.....	4,001	148,405
Hay, tons.....	2,176	140,736
Wool, hales.....	1,861	50,507
Hops, bales.....	189	10,243

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, ¼ sacks.....	24,124	3,775,446
Wheat, centals.....	97	5,236,832
Barley, centals.....	6,262	3,790,491
Oats, centals.....	532	43,946
Corn, centals.....	260	18,337
Beans, sacks.....	338	25,455
Hay, hales.....	2,807	130,464
Wool, pounds.....	—	4,324,433
Hops, pounds.....	111	1,009,637
Honey, cases.....	4	3,530
Potatoes, packages.....	1,245	70,718

California Dried Fruit at New York.

NEW YORK, May 18.—Evaporated apples, common, 4½@5c; prime wire tray, 5½@6c; choice, 6½@7c; fancy, 7½@8c.

California dried fruits quiet at nominally unchanged figures.

Prunes, 3½@7c.

Apricots, Royal, 12½@14c; Moorpark, 15@18c.

Peaches, unpeeled, 7@9c; peeled, 16@20c.

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Tulare Grange.

TO THE EDITOR:—The regular semi-monthly meeting of this Grange was held on Saturday. After the transaction of routine business and the conferring of the first and second degrees, the subject of co-operation in selling and buying was taken up, it being designated by the Worthy Lecturer of the National Grange for consideration this month. A committee, consisting of Bros. Berry and Mull and Sister Styles, was appointed to report at next meeting upon feasibility and methods.

The Worthy Secretary, Sister Morris, moved that a committee be appointed to interview the Board of Supervisors on passing an ordinance providing for the planting and protection of shade trees on the public roads. The motion was carried.

Sister Gill moved that a committee of five be appointed to prepare for a Grange exhibit at the District Agricultural Fair, to be held in Tulare next October. The motion was carried and the committee appointed.

According to Grange custom, the first Saturday in June being Children's Day, a special committee was appointed to arrange for it. On this day the recitations and exercises are to be all by the children.

EDUCATIONAL PROPOSITIONS.—The subject of the change in the school laws of California, as proposed by the California State Educational Association, coming up, it was conceded that sufficient public attention is not given to this subject. It was argued by some that the course of studies now required in the schools is not what the condition of society requires—that more instruction should be given in industrial pursuits and less to a classical education. It was argued by others that there is no room for other studies in our public schools—that the course of studies now required is so exacting as to seriously strain the mental condition of a child, and frequently wreck it. This was not denied, but neither was it denied that not less than one-half the studies now exacted in our public schools are practically valuable to the students when they mature; that more than one-half the studies now required are not fully comprehensible to the immature mind of the child; that it is these studies, obscure to the child's mind, which wreck it; that in schools where technical studies are pursued, many of the children show wonderful aptness for them, gratifying alike to the child, the teacher and the parent, and, were greater opportunities afforded in our public schools for these studies, better educational results would be had; that many a parent says, "My boy or my girl takes great interest in or shows great aptness for this or that handicraft, and I wish it were taught in our public school;" that these expressions on the part of the parents and these dispositions and results on the part of the children should be suggestive to boards of education; that education is

now conducted on lines that, to say the least, are misleading; that the University is a classical school, that it exacts as a condition for entrance a classical preparation, that it sends around its examiners to the various high schools of the State to see the course of studies preparatory to the University as pursued in the high schools, which is on the same lines as pursued in the University; that this necessitates a similar line of studies in the grammar school, which is preparatory to the high school; and so we say the whole course of education in our public schools is misleading. Can our State Board of Education, which is a statutory and official body, and our State Educational Association, which is not statutory or official (but is composed, to a marked degree, of leading educators and men of advanced thought on educational lines), give us in our public schools a more useful and efficient course of studies?

It was, without any dissent, agreed that they can, and a committee of five was selected to formulate the views of Tulare Grange on this subject, and, through the Hon. E. O. Larkins, have them presented to the State Educational Association at its next meeting.

BONDS AND TAXATION.—The subject of the proposed constitutional amendment, exempting bonds from taxation, to be voted for at the State election to be held next November, was brought up in the Grange. It was mentioned that a State annual convention of the Bankers' Association of California was then being held in Sacramento; that a leading subject of consideration at that meeting was how to carry the proposed amendment and to provide means therefor; that the leading argument of the bankers, as expressed by themselves at such meeting, in favor of the constitutional amendment, is that bonds are not now taxed because the assessment law is defective; that this leads to fraud and perjury in giving in returns of taxable property, and to avoid this fraud and perjury in giving in property for assessment, the proposed amendment (prepared by the bankers themselves, and by them railroaded through an accommodating Legislature) should be carried and they—the bondholders—be relieved from paying any tax on bonds.

The members of the Grange seemed to think the admissions of the bankers in their resolutions, advocating the proposed amendment of the constitution, are shameful; that they are no just plea for its adoption, but rather undeniable evidence of the necessity of amending the assessment laws so as to require the assessors to ascertain what bonds are out in their several counties and assess them the same as other evidences of indebtedness are assessed; that to exempt bonds from taxation the rate of interest which the bond should bear should be stipulated in the laws, and not left to the discretion of the money lender; that to exempt bondholders from their portion of the tax to support the Government which enforces the payment of the bond, without limiting the rate of interest which the bond should bear, will be an unjust and iniquitous discrimination of law in favor of a class than whom none can better pay their share of tax, and none are so ready to appeal to the law to enforce the payment of their bond, interest and principal; that this subject affects every tax-payer and that the amendment should be beaten at the election because it is unjust.

The Worthy Master read a thoughtful and well-written paper, "Keeping Books on the Farm." J. T.

From the Worthy Master.

TO THE EDITOR:—"In what way can business co-operation in the purchase of supplies be made most available to members of the Grange?" is the April topic suggested by the National Lecturer and his suggestions were printed in the PACIFIC RURAL PRESS, page 287, of May 5.

It is gratifying that the seed sown by Bro. Bachelder is bearing fruit in California. In the way of fire insurance more than \$50,000 have been already subscribed in this county, and the for-

mation of a county mutual insurance company seems to be an assured fact.

I will excuse myself for not writing for the PACIFIC RURAL PRESS by stating that I have injured my right hand so that it is almost impossible to write. Persons waiting for letters will please take notice. G. W. WORTHEN.

San Jose, May 8.

Fire Insurance Convention.

TO THE EDITOR:—All mutual fire insurance companies in California are requested to send delegates to a convention of such companies to be held at No. 542 Byrne Building, on Broadway and Third streets, Los Angeles, on June 20, 1900, for the purpose of forming a State association of such companies for mutual benefit. Every farmers' club, society or community which is thinking of forming or is in any way interested in these companies is invited to be present.

By order of the Board of Directors of the Orange County Farmers' Mutual Fire Insurance Co.

T. B. REED, Secretary.
Fullerton, Cal., May 10.

TOO MUCH FAT.

Anyone who has suffered from the deformity of too much fat, knows how to sympathize with the wife of a prominent Congressman at Washington who had to give up her social leadership on account of her excessive corpulence. Like a drowning man who grasps at a straw, she tried everything she heard of or could think of and yet continued to get fat. Finally, the treatment of a celebrated German lady specialist, without inconvenience or detriment to her health, reduced her weight to its normal proportions.

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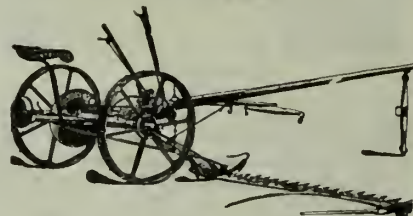
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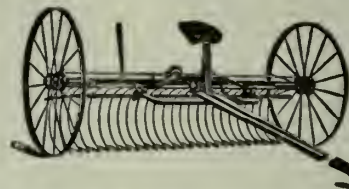
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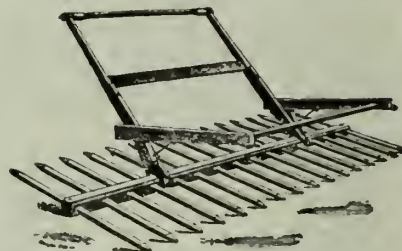
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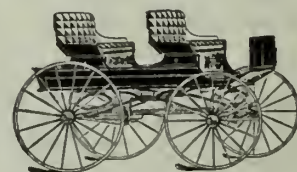
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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING MAY 1, 1900.

- 648,478.—AWNINGS—W. H. Arnold, Oakland, Cal.
648,720.—EXCAVATOR—G. W. Barnhart, S. F.
648,830.—PEN EXTRACTOR—J. D. Barrie, Los Angeles, Cal.
648,377.—RANGE FINDER—C. J. Beauvais, Phoenix, A. T.
648,456.—PANTS GUARD—I. H. Fay, Riverside, Cal.
648,614.—PUMP—M. M. Grove, Garfield, Wash.
648,867.—BUTTON—N. B. Hale, San Bernardino, Cal.
648,615.—BELT GUIDE—Hamilton & Drake, Ventura, Cal.
648,409.—THUMB RULE—P. R. Hazeltine, Los Angeles, Cal.
648,620.—LOADING PLATFORM—H. C. Holmes, S. F.
648,624.—SIDEWALK DOOR LOCK—P. H. Jackson, S. F.
648,511.—HANDSAWS—J. G. Lyons, Cosmopolis, Wash.
648,766.—PIPE WRENCH—R. MacKay, Los Angeles, Cal.
648,513.—BASKET CARRIER—L. S. Manning, Oakland, Cal.
648,766.—DRILLING MACHINE—J. R. Nelson, DeLamar, Nev.
648,778.—VEHICLE BRAKE—Neumann & Hartmann, Seattle, Wash.
648,521.—CHOPPING BLOCK—M. Parolio, S. F.
648,795.—ROLLER BEARING—J. R. Richardson, Madera, Cal.
648,641.—CONVEYING MACHINE—A. P. Tatterson, Stockton, Cal.
648,576.—MEASURING RULE—W. B. Taylor, Walla Walla, Wash.
648,814.—CARD CASE—W. Trewartha, Angels, Cal.
648,645.—FOLDING CRATE—Wetzel & Shaw, Alameda, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

PORTABLE ADJUSTABLE VESSEL-LOADING DEVICE.—H. C. Holmes, San Francisco, Cal., assignor to R. D. Chandler of same place. No. 648,630. Dated May 1, 1900. The object of this invention is to provide a device for the loading of vessels from wharves, and it is particularly adapted for the purpose of discharging wagons or carts directly upon a vessel's deck or into the hold. It consists of an extensible driveway comprising the sections, one of which is slidable with relation to the other, so that it may be extended for use or drawn in upon the other section for transportation. The supporting section has wheels under one end, and means for connecting the opposite end with a team or motor so that it can be moved from place to place. Suitable guide rollers are so arranged as to be turnable and relieve the friction of the sliding of the two parts of the driveway. Angle iron strips are bent at the ends of the side rails and form stops to prevent the vehicle wheels passing over the end of the driveway.

FOLDING CRATE.—Henry Wetzel, Alameda, Cal., and F. J. Shaw, Oakland, Cal. No. 648,645. Dated May 1, 1900. The object of this invention is to provide a crate or box which may be folded to small compass for transportation or storage, and extended into shape as a container and locked in its extended position. The sides and ends are made of spaced strips, vertical plates at the inner angles of the box or crate are hinged together along their meeting edges and

have lateral extending sockets adapted to receive and support the end portions of the strips forming said sides and ends. A hinged top and bottom and hinged plates extend across and project beyond the adjacent edges of the top, bottom and sides, and said hinged plates have interlocking loops which are adapted to align and guided slide bolts are fitted to engage and interlock with said loops to hold the box in position. When the parts have been folded together they are retained in place by hook plates which extend over and engage with the opposite sides.

—There is a complicated system of weights and measures in use in the Philippine Islands. The unit of weight for hemp, sugar, copra and grain is the picul, which is equivalent to 139.4674 pounds, United States standard, and the picul is divided into 100 cates. Grain is also sold by dry measure. The standard is the cavan, which is equivalent to 68.1 United States quarts or 2.13 bushels. The cavan is made up of twenty-five gantas (2.724 quarts each), which in turn contain eight chupas (22.88 cubic inches each) of four aptanes each (5.644 cubic inches in each aptan). Tobacco and ramie are sold by the quintal, in bales of two, three or four quintals each. The quintal is equivalent to 101.41 pounds and is divided into four arrobes of 25.35 pounds. Oil sells in tinajas or jars of sixteen gantas each, the tinaja holding about 50.71 quarts and the ganta being equivalent to 3.17 quarts.

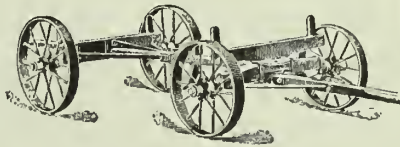
Bugs, Worms, Insects

of ALL kinds, injurious to trees, plants and vines are quickly destroyed by the use of

SWIFT'S ARSENATE OF LEAD.

The latest and most effective insecticide. As it is white and adheres to the leaves you can always tell when a second application is needed. Never scalds or burns the foliage. Used by the Gypsy Moth Commission of Massachusetts. Endorsed by leading State Entomologists. Send for free booklet "Injurious Insects." Made and sold only by

Wm. H. SWIFT & CO., 93 Broad Street, BOSTON, MASS.



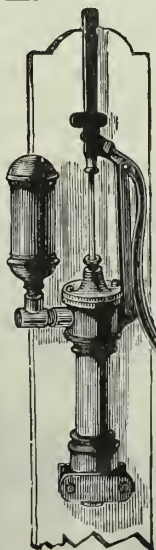
Pacific Steel Handy Wagon.

WHEELS.....28 and 34 inches high.
TIRES.....4 and 5 in. wide, 1/2 in. thick.
AXLES.....1 1/2 inch, solid steel.
BOLSTERS AND AXLE STOCKS...White oak.
CAPACITY.....Guaranteed 5000 lbs.

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BRANCH, 134-136 MAIN ST.

THE "NEW CENTURY" A Grand Success.

JACKSON, MICH., Feb. 26, 1900.

It affords me pleasure to report the U. S. "New Century" separator a grand success. I find it vastly superior to either the old pattern or the DeLaval, both of which I have been using side by side. I find the capacity increased about 50 per cent. It is a smoother and lighter running machine and a closer skimmer.

H. F. PROBERT, Breeder of Jersey Cattle.

We furnish a complete line of Dairy Apparatus. Catalogues free.

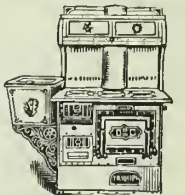
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\$50.00 RANGE FOR \$25.00

TO INTRODUCE OUR

TRIUMPH STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 2 1/4 inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. **WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo.** Will ship C. O. D. with privilege of examination.



ASPHALT PAPER PIPE.

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MCCARTHY & MACKAY,

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Pacific Saw Manufacturing Company

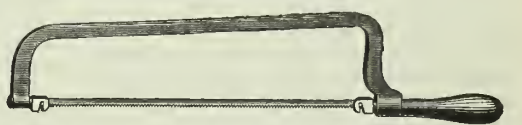
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The Best in Use!

Emery Wheels, Grindstones, Files, Saws,

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THE IRRIGATOR.

Prof. Mead's Work in California.

Prof. Elwood Mead of the Agricultural Department, Washington, D. C., arrived in this city May 14 on a tour of inspection and for the purpose of initiating the work of investigating the watersheds and water supply of California. Prof. Mead is in charge of the irrigation investigations of the department and is an expert on irrigation. He is enthusiastic over the interest shown in California on this subject, and predicts no end of good results in the near future. At this time he will remain in California only two weeks, as other business calls him to Utah, but in the summer he expects to return here for the purpose of closing up the work which is about to begin.

"Our investigations," he said last night, "will cover eight streams in northern California. Our object is to ascertain how the water is used, the quantity required to irrigate an acre of land and how the supply can be increased by economy and system. We will learn who claim the water on either side of the streams, ascertain how their rights have been established and the use they are making of the water."

"With this data we will have a complete exhibit of the irrigation development on those streams. Upon this can be founded additional legislation, both State and national, on this all-important subject. From the reports on each stream recommendations will be made with the view of changing existing laws to such an extent as will give every one dependent on irrigation a fair chance at them. It is not intended to interfere with existing rights, but to give them better protection, at the same time making a fair division of the streams. Under existing circumstances every user of water is trying to get all the water he can. As a result there is great waste, and it is this that we will endeavor to do away with."

"We are the only country in the world where irrigation has gained any perfection through private enterprise. In all European countries where the work has been attempted it is always through the Government and under governmental control. We have now reached a point where governmental assistance is necessary, and I believe that this agitation will bring it about."

The work which Prof. Mead is about to undertake is the outgrowth of the convention called by the California Association for the Storge of Flood Waters last November. Since then the California Forest and Water Association has taken the subject up, with the result that over \$10,000 has been raised by private subscription to carry out the work. To-day Prof. Mead will sign an agreement which already received the approbation of the Agricultural Department by which both the Government and association set apart certain sums of money for the survey of the streams. In this work Prof. Mead will be assisted by the following engineers who have been assigned as follows: C. E. Grunsky on Kings river, Marsden Manson on Yuba river, Prof. Frank Soule of the University of California on the San Joaquin, Prof. C. D. Marks of Stanford on the Salinas, William E. Symthe, assisted by Prof. J. M. Wilson, special agent of the Agricultural Department, on the Susan. In southern California James D. Schuyler is preparing a report on the storage and distribution of water, founded on the observations which he has been making on the Sweetwater.

Upon the individual reports of the engineers and from his own observations which he will make while this work is in progress, Prof. Mead will prepare a general report. This report will go to Congress with some strong recommendations. Just what these recommendations will be Prof. Mead is not at liberty to say, but he hopes they will be strong enough to accomplish much good.

The agreement between the Agricultural Department and the California Forest and Water Association provides

for the expenditure of the following sums: On Kings river, \$375 by the department and \$1125 by the association; on the San Joaquin, \$375 by the department and \$1125 by the association; on the Salinas, \$375 by each; on the Yuba, \$375 by each; on the Susan, \$375 by each.—Chronicle.

Geological Survey Work in the San Joaquin.

FRESNO, May 11.—The committee appointed by the Kings River Storage Association, consisting of Frank H. Short, John C. Moore and H. D. Martin, has met with J. B. Lippincott of the United States Geological Survey here and reached an agreement to proceed with the survey, toward which the Government is to contribute \$2500 this summer. The bulk of the money raised by the State Water Storage Association is to be expended on the basins of the Kings river and the San Joaquin, the total amount appropriated for the former being \$4500 and for the latter \$3500.

The agreement reached here by the committee involves the following points in brief: The expenditure by the United States Geological Survey of \$2500 for reconnaissance and fuller later surveys of the reservoir sites discovered; the expenditure by the Kings river irrigation companies of \$1500, and by the California Water and Forest Association of \$1000 for survey work this summer; the United States Geological Survey to have charge of the field work; office expenses to be equally apportioned. The gauging stations will be maintained at the expense of the United States Geological Survey, except in the event of the failure of congressional appropriation for the hydrographical department of the survey. The Water and Forest Association is to be permitted to have the work inspected by its engineer at any time. Maps and notes are to be kept in the archives of the United States Geological Survey.

The Nation's Wheat Crop.

WASHINGTON, May 10.—The monthly report of the Agricultural Department is as follows:

Returns to the statistician of the Department of Agriculture made up to May 1 show the area of winter wheat in cultivation on that date to have been about 26,585,000 acres, or 2,563,000 or 11.8% less than the area estimated to have been sown last fall.

The reduction in acreage in the principal States owing to winter killing and the ravages of the Hessian fly is as follows: Indiana, 1,608,000; Ohio, 969,000; Michigan, 317,000; Pennsylvania, 158,000 and Illinois, 137,000 acres.

For the area remaining under cultivation the average condition on May 1 was 88.9. While this average is 6.2 points above the mean of the averages of the last ten years, and has been exceeded only three times in fifteen years, it must be remembered that the acreage plowed up, cut for forage (except in California, where it is not yet definitely ascertainable), or otherwise abandoned, has been entirely eliminated. The high averages of condition reported last month for Kansas, Missouri, Texas and other more or less important wheat producing States that have escaped the ravages of the fly have been fully maintained, and on May 1 nearly one-half of the entire winter wheat acreage remaining under cultivation reported a full normal or still higher condition. The average condition of winter rye on May 1 was 88.5, as compared with 85.2

Deafness Cannot Be Cured

By local applications, as they cannot reach the diseased portion of the ear. There is only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube gets inflamed you have a rumbling sound or imperfect hearing and when it is entirely closed deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever. Nine cases out of ten are caused by catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that can not be cured by Hall's Catarrh Cure. Send for circulars, free.

F. J. CHENEY & CO., Toledo, O.
Sold by Druggists, 7c.
Hall's Family Pills are the best.

on May 1, 1899; 94.5 on May 1, 1898, and 89.7 the mean of the May averages for the last ten years.

Spring plowing is more or less late in almost every State in which its condition is a matter of any especial significance. The only notable exceptions are Pennsylvania, Kentucky, Illinois, Kansas, Missouri and Arkansas. The work already done in the country at large is estimated at 68.4% for the total contemplated, the proportion usually done by May 1, being about 75% of the whole.

What is Needed to Gain Success.

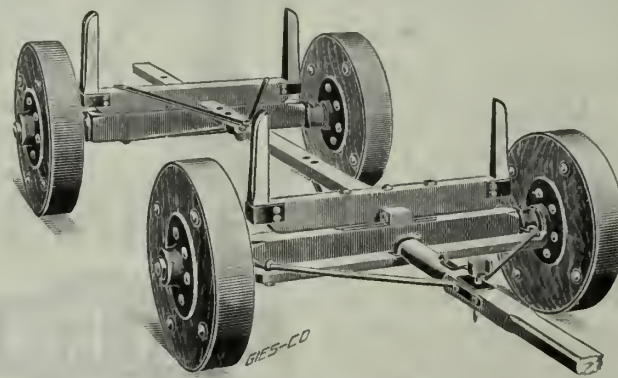
One of Anna Farquhar's "Convictions" in the April number of the National Magazine is to the effect that: Most people, having attained eminence of any kind, are immediately prepared to tell others what means they must employ in attempting to do likewise, forgetting that no two lives run parallel, either successfully or disastrously. There is no cut and dried method to be employed by those anxious to make the best of the unsolicited lives bestowed upon them, because no mechanical principles of success work out in order unless the necessary basic characteristics, upon which all such processes are built, can be furnished along with the patent modus operandi. A business man can instruct aspirants for his kind of success hourly, yearly; giving the best of his own experience to willing minds, which at the first independent opportunity (owing to an individual lack of certain elements elusive and almost indefinable, indigenous to the instructor's nature, impossible to the pupil) make pitiful failures although standing upon those same principles of success.

Pre-eminent success is set in motion by a genius for making the best and most attractive of whatever is undertaken. Like all genius this mastering force is born with the man, possessing an essence no finger can touch but every being feels. In lieu of a more definite term this essence must be called charm—that power which draws everything and everybody its way. The impelling power is successful no matter where it be placed; in drawing room or stock exchange; senate chamber or police court; newspaper office or in Archey road. The successful merchant has it; the successful artist has it; the successful preacher or actor has it.

THE Southern California Deciduous Fruit Exchange met in Los Angeles last week. A. R. Sprague was re-elected president, J. B. Neff vice-president and T. J. Ashby secretary. An executive board, composed of E. B. Reid of Cucamonga, Morton Haig of San Gabriel and J. B. Neff of Anaheim, was appointed. The president's report showed the Exchange to be in a prosperous condition, having marketed 120 cars of fruit and nuts during the season of 1899, as against 50 cars marketed in 1898.

WATCH AND CHAIN FOR ONE DAY'S WORK.

Boys and Girls can get a Nickel-Plated Watch, also a Chain and Charm for sealing 14 doz. Packages of Blaine at 10 cents each. Send your full address by return mail and we will forward the Blaine, post-paid, and a large Premium List. No money required. BLAINE CO. Box 500, Concord Junction, Mass.



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Steel Wheels, 28 and 30 Inches, 4-in. Tire. Wood Wheels, 28 and 30 Inches, 6-in. Tire.

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Write or Call. ALLISON, NEFF & CO., 222 Mission St., San Francisco.

TWO hundred bushels of Potatoes remove eighty pounds of "actual" Potash from the soil. One thousand pounds of a fertilizer containing 8% "actual" Potash will supply just the amount needed. If there is a deficiency of Potash, there will be a falling-off in the crop.

We have some valuable books telling about composition, use and value of fertilizers for various crops. They are sent free.

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ELGIN Watches keep accurate time.
Sold by jewelers in cases to suit.
Prices reasonable.

THE VETERINARIAN.

Anthrax and Black Leg.

TO THE EDITOR:—In your issue of the 5th inst. we notice an inquiry from W. P. McConnell of Livingston in regard to a disease which was affecting his cattle, from which two had already died, and setting forth the appearances of the carcasses after they had been skinned. In your reply, we notice that you informed Mr. McConnell that probably the disease which destroyed his cattle was anthrax, and gave Dr. Creely as authority for the statement. We judge from our experience and from the description given by Mr. McConnell that the disease which destroyed his cattle was black leg and not anthrax, and that beyond a doubt Dr. Creely meant this disease, calling it symptomatic anthrax, which is a very popular name among scientific men and veterinarians for black leg, and perhaps in writing his opinion he omitted the word "symptomatic." The term, we will admit, is rather confusing to the popular mind, as the two diseases are in no manner connected. Anthrax is a most virulent, contagious and infectious disease, due to a special organism termed bacillus anthracis, which on introduction into the animal economy, produces anthrax and no other disease. In the same manner black leg or, as it is sometimes termed, symptomatic anthrax, on account of the resemblance of some of the symptoms of this disease to the symptoms of anthrax, is due to a special germ which is responsible for black leg and for no other condition. Outbreaks of anthrax among cattle can be prevented by vaccinating the cattle in infected districts with Pasteur Anthrax Vaccine, the vaccine taking its name from its eminent discoverer, M. Pasteur, who attained such a world-wide reputation from the discovery of the treatment for hydrophobia. Anthrax Vaccine only prevents outbreaks of anthrax and no other disease. In the same manner, black leg can be prevented by vaccinating with Pasteur Black Leg Vaccine. This fact is now thoroughly established, the operation having been in successful effect for the last fifteen years in Europe, and for the last five years in the United States, as it was introduced into the continent of North America by the Pasteur Vaccine Company in 1895; and from our experience we should judge that Mr. McConnell's cattle were infected with black leg, and that for him to prevent losses in the future, it would be advisable for him to adopt preventive vaccination for black leg.

PASTEUR VACCINE COMPANY.
Chicago, May 9.

Answers by Dr. Creely.

TO THE EDITOR:—One teat of a cow sprays when she is milked; the teat is gradually drying up and a hard substance is forming in the udder above the affected part. She had a calf about two months ago. Can you prescribe a remedy.—SUBSCRIBER, Cucamonga.

Inject with the following once daily: Iodide potash, 40 grains; iodine crystals, 10 grains; dilute alcohol, 2 ounces. Mix. Report in ten days.

E. J. CREELY, D. V. S.
510 Golden Gate Ave., S. F.

TEACHER: "I called to see you, sir, about your son's schooling, and am sorry to say that he is behind in his studies." Parent: "That's all right; if he wasn't behind, how could he pursue them?"

LOOKING FOR BELGIANS?

Real Showy, Handsome Creatures.
Prize Winners from Prize Winners.

Then visit or correspond with

Pittcock's Belgian Hare Rabbitry,
ELMHURST, CAL.

Prince Britain, Chief Kitchener, Red Ranger, and other choice bucks at stud.

PAJARO VALLEY POULTRY YARDS,
G. H. LELAND, Watsonville, Cal. Drawer D.

Choice Eggs from Thoroughbred Stock—Buff, White and Barred Plymouth Rocks; Buff and White Leghorns; Buff Cochins.

\$2 PER 15 EGGS. BELGIAN HARES.

Demand For Prison Grain Bags.

SAN QUENTIN PRISON, May 12.—Grain bags and how to keep pace with the demand for them was the principal topic to occupy the attention of the State Board of Prison Directors at the regular monthly meeting held here today.

The demand for prison-made bags has become so great, orders from every point of the State pouring in, backed up by the necessary affidavit, that the directors are unable to discover any method of coping with the problem of equalizing supply and demand, and the matter has been indefinitely postponed. In the meantime only those orders will be filled which reached the prison early.

The grain bag report was as follows: Carried over on orders from last year, 416,000; sold since January 1, 2,908,145; shipped since that date, 218,865; sold awaiting shipment, 3,105,280; on hand manufactured and ready for delivery, 1,931,500; to be manufactured to fill orders on file, 1,173,780; raw jute in warehouse, 393 bales, and 7000 bales on board the British ship Euphrosyne, now unloading in San Francisco harbor.

The Racing Outlook.

The California circuit is rapidly assuming shape and bids fair to be the most successful held in eight or ten years. The various associations have taken hold with more than ordinary energy and intelligence, and the harness horsemen will have almost four months of continuous racing, with no more than five or six days in any one town, except Sacramento, where the State Fair continues for two weeks.

The first meeting of the year is scheduled for Santa Rosa, under the auspices of the Pacific Coast Trotting Horse Breeders' Association. Then will follow meetings at Vallejo, Colusa, Willows, Red Bluff, Chico, Marysville, Woodland and Sacramento. The circuit to follow Sacramento has not yet been definitely arranged, but it will take in Oakland, Stockton, the San Mateo Association at Tanforan, Salinas, Fresno and Los Angeles.

At a rough estimate, the various associations throughout the State will offer \$150,000 in the aggregate for light-harness horses.

WYOMING claims to be the leading wool State. Secretary Snow of the State Sheep Commission states that a conservative estimate of the number of sheep now in the State is 3,600,000 head, against 3,186,000 head in Montana. The average weight of a fleece in Wyoming is 7.75 pounds, while in Montana it is only 6.8 pounds. Secretary Snow places Wyoming's clip at 25,000,000 pounds, while Montana's clip will be about 23,000,000 pounds.

THIS IS IT.

The incubator which has put an end to all hatching worries and difficulties. Its simplicity in operation and its uniform success in hatching every fertile egg makes

THE PETALUMA INCUBATOR the best investment you can make. There's no uncertainty about its work. And then, it's built to last. 4 sizes—\$4 to \$24. We pay freight anywhere in U. S. Handsome catalogue free. PETALUMA INCUBATOR CO., BOX 19, PETALUMA, CAL.

Horse-High Bull-Strong Pig-Tight... FENCE!

Over 100 Styles, plain and ornamental. Build it yourself at the actual wholesale cost of the wire. Don't miss this **GOLDEN OPPORTUNITY** Write for our Catalogue and convince yourself how easily and cheaply it can be done with a Duplex Machine. KITSELMAN BROS. Box 288 Ridgeville, Ind.

NEW MODEL INCUBATORS.
Up to date in every way. Equipped with nursery under egg trays, and self-regulating device. Poultry supplies. Thoroughbred fowls. **POULTRY GUIDE FREE.** Stockton Incubator Co., 707-709 E. Main St., Stockton

Oakland Poultry Yards

and **PACIFIC INCUBATOR COMPANY,**

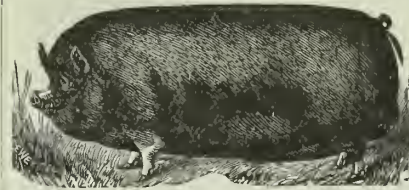
Established 1876.

1317 Castro St., Oakland, Cal.

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COMPLETE STOCK OF POULTRY SUPPLIES AND SUNDRIES ALWAYS ON HAND. SEND FOR OUR 60-PAGE CATALOGUE, JUST ISSUED.



Blood Will Always Tell.

The Lynwood Herd of Swine have again been awarded the majority of premiums at the State Fair, although the competition was the greatest ever known and the exhibit much the largest. When you want something real choice that you can depend upon write JAS. R. BOAL, Mgr., 126 W. 25th St., Los Angeles, Cal.

Nitrate of Soda as a Fertilizer.

QUICK FERTILIZER.

There is nothing in the American market to-day that acts so quickly and surely as a fertilizer as

NITRATE OF SODA.

Apply to the surface in the spring. A small quantity does the work. Watch the crops closely and when they look sick or make slow growth apply the remedy promptly.

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316 California Street, - - - San Francisco, Cal.

Write to them for pamphlets.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs, Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

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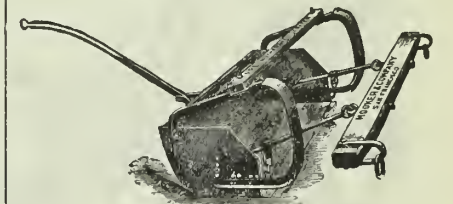
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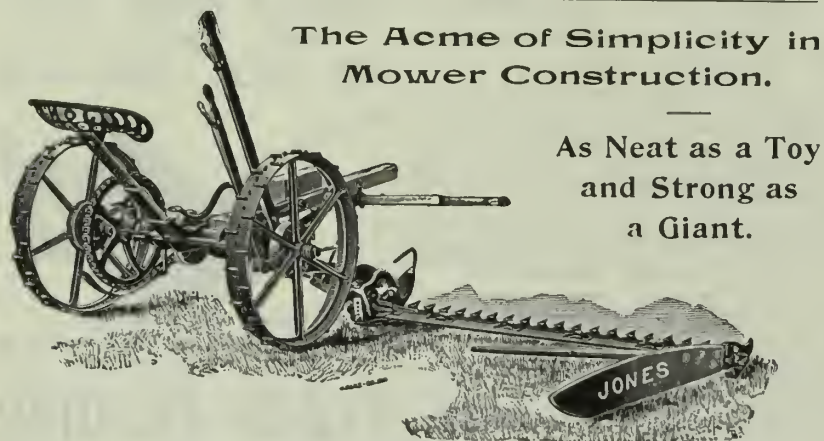


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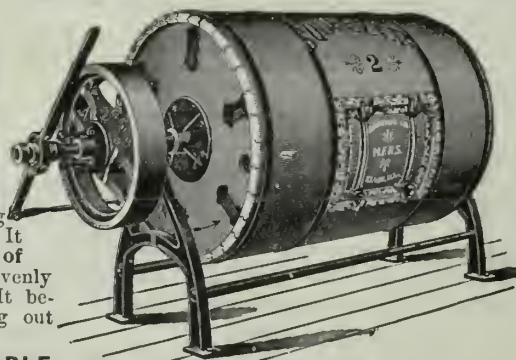
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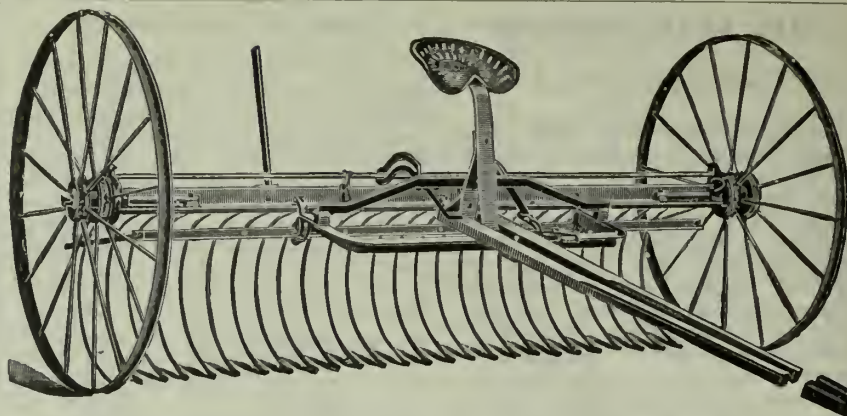
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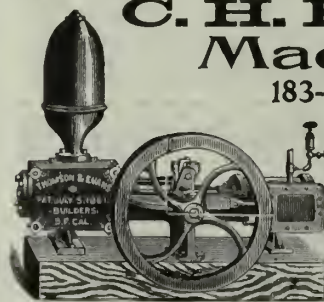
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Vol. LIX. No. 21.

SAN FRANCISCO, SATURDAY, MAY 26, 1900.

TWENTY-NINTH YEAR.
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Demonstration of Crown Gall Contagion.

In the PACIFIC RURAL PRESS of May 5th we gave an outline of the very creditable work done by Prof. Tuomey of the Arizona Experiment Station in demonstrating the specific organism to which the grievous disease of fruit trees commonly known in this State as "root knot" is due. So many of our readers are interested in the matter that they will be pleased to see the way in which Prof. Tuomey satisfied himself that the trouble was communicable before he proceeded to determine the character of the parasitic growth which was thus shown to exist. Director Forbes of the Arizona Station kindly enables us to reproduce the striking illustrations which embody the proof in popular form.

Prof. Tuomey demonstrated the contagious character of the disease in several ways. He examined volunteer almond seedlings growing under the trees in an Arizona almond orchard, of which a view is given in the large engraving. Sometimes there were fifty to seventy of these seedlings under a single bearing tree. They were only a few months old and were from 6 to 30 inches high. He examined about 400 of them, and in no case did he find a seedling with a crown knot growing under a tree which was free from the disease. On the other hand, he found in one

case five diseased seedlings within 12 inches of the bole of a diseased tree. As the seedlings were at greater dis-

nearness to the source of infection.

The next method of demonstrating the contagious nature of the disease was by planting almonds in soil with which some minced knots were mixed, as compared with those planted in soil free from this mixture. In the two divisions of soil mixed with fragments of an old knot sixteen and seventeen diseased seedlings were found, while in the soil free from this mixture none were diseased. Fig. 1 shows knotted seedlings grown in pots of crushed quartz, with which small pieces of an old knot were mixed. This was to show that the disease came from the old knot and not from other causes which might exist in ordinary soil. Fig. 2 shows diseased seedlings grown in the soil mixed with gall fragments, while the seedlings grown without these fragments were healthy. Fig. 3 shows a row of the seedlings grown in the contaminated soil to exhibit the proportion of them which were actually affected by the disease.

These results were striking, but even more complete demonstration was had by inserting fragments of an old knot under the bark of healthy seedlings. Twenty seedlings were thus inoculated, and all were afterwards found to be diseased—the disease being



Five-Year-Old Almond With Galls Nearly Surrounding Root Crown.

nute worms, which produce root swellings on several kinds of fruit trees. These worms are found in old galls sometimes, but they are there as visitors. When they produce a gall it takes a different form, as is shown by contrasting Fig. 6 with any of the preceding figures. It will be remembered by those who read our previous reference to Prof. Tuomey's work that the crown gall or

FIG. 1.



FIG. 2.

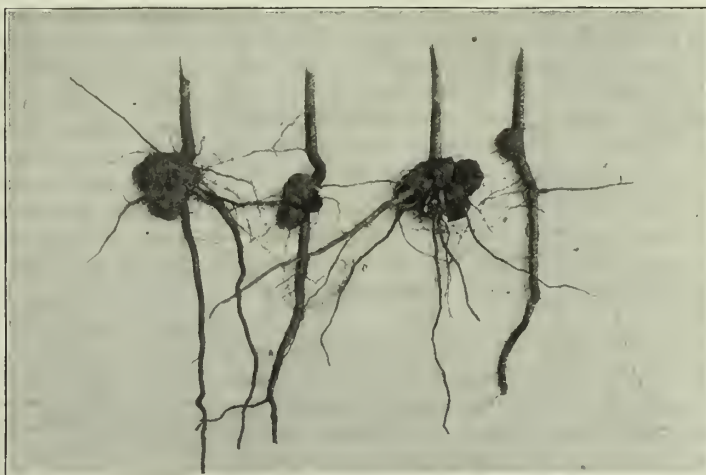


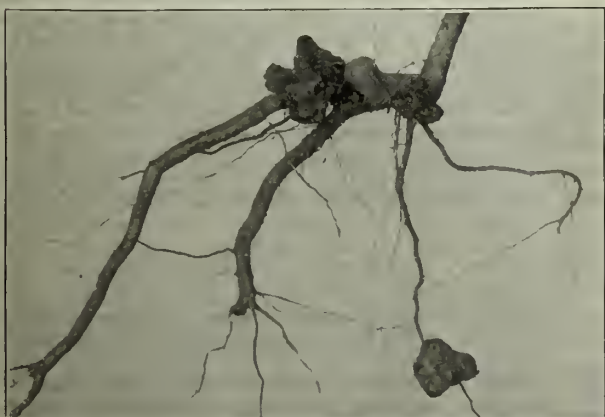
FIG. 3.



Crown Galls Produced on Almond Seedlings by Growth in Soil Containing Gall Fragments.

tance from the diseased crown of the parent tree they were freer from disease, and the prevalence of the disease seemed directly proportional to the

FIG. 4.



developed in every case at the point where the incision was made. Fig. 4 shows one of these seedlings, the upper gall appearing at the incision. The large gall surrounding the fine lateral root was not from the introduction of diseased tissue; it developed later. Fig. 5 shows two knots, both

FIG. 5.

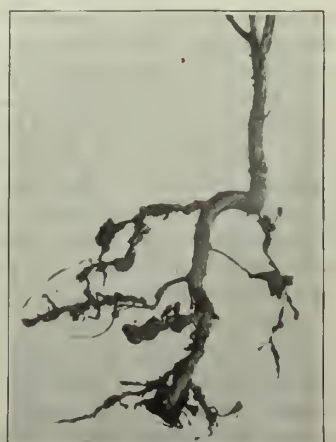


of which came from insertion of old gall pieces. One was put at the root crown below the earth; the other developed two or three inches above ground.

All these galls are in contrast with the form of gall produced by nematodes — mi-

root knot is caused by one of the slime molds, a fungus, and its destruction by fungidal copper preparations like the strong or winter Bordeaux mixture is therefore made clear. Prof. Tuomey finds, however, that a paste made of two parts of bluestone, one part of copperas and three parts of lime, crushing and using enough water to form a paste is the best material to apply when a knot is removed, but bluestone and lime might answer.

FIG. 6.



Nematode Root Galls.

Galls Produced by Inoculation With Gall Fragments

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TABLE OF CONTENTS.

EDITORIAL.—Demonstration of Crown Gall Contagion, 321. The Week; Keep the Farmer on the Farm, 322.
ILLUSTRATIONS.—Five-Year-Old Almond With Galls Nearly Surrounding Root Crown; Crown Galls Produced on Almond Seedlings by Growth in Soil Containing Gall Fragments; Galls Produced by Inoculation With Gall Fragments; Nematode Root Galls, 321.
QUERIES AND REPLIES.—Fine Six-Rowed Barley; The Public Land Laws; Prune Aphid and Red Spider; Wire Worms in Beet Fields; Polish Wheat; Diseased Fruit Twigs; Lecanum Hemisphericum; The Purple Scale; Lemon Products, 323.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending May 21, 1900, 323.
THE DAIRY.—Care of Milk; San Joaquin County Creameries, 324.
THE POULTRY YARD.—The Poultry Business in California, 324. Some Poultry Computations; Imports of Poultry 325.
HORTICULTURE.—The English Walnut in the Sacramento Valley, 325.
FLORIST AND GARDENER.—Seasonable Suggestions, 326.
AGRICULTURAL ENGINEER.—Oil on Country Roads, 326.
FRUIT MARKETING.—The Prune Association, 326.
AGRICULTURAL REVIEW.—327.
THE HOME CIRCLE.—The Weed's Complaint; Discontent; Sergeant Davis' Comrade, 328. Taking Cold; Footwear Nevers; Bruises, 329.
DOMESTIC ECONOMY.—A New Way to Mix Cake; Hints to Housekeepers; Domestic Hints, 329.
THE MARKETS.—Produce Market; Fruit Markets, 330-331.
THE FIELD.—The Hop Growers' Proposition, 332.
PATRONS OF HUSBANDRY.—Tulare Grange, 334.
THE VETERINARIAN.—Answer by Dr. Creely, 335.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 333. A Review of Forcing Plants for Sale, 335.

The Week.

The season is advancing favorably and the time of greatest activity is at hand. There is a lack of help in many places, and fruit growers, canners and driers will probably need all the hands they can win from the towns this year. Fortunately this supply is proving more effective than was thought possible some years ago, and town people of both sexes and all ages are improving their health winning not a little money by summering in the fruit districts. The plague precautions now prevailing bid fair to interfere with the Asiatic labor supply unless they should soon be relaxed.

Fruit prices are still much in doubt and likely to remain so until better ideas can be had of the supplies to be available. At present the reports are too conflicting in various regions to make generalizations safe. The Alameda county cherry growers have organized to get better prices from the canners, and have secured the following: Royal Annes, 5½ cents a pound; ordinary white, 3½ cents; black, 3½ cents. This is an advance of 2 cents for Royal Annes and 1 cent for the others above the offers made before the organization was effected.

Wheat is still more depressed here than at the East or in Europe. There is little real change, but the situation is weak. Only one cargo cleared for Europe and 500 tons for Japan, which is a movement in the right direction and may lead to something. Barley is weak and dull in expectation of large receipts of new. Red and black oats hold up well, but light shades are out of fashion. Corn is unchanged, Eastern corn being in better supply. Old hay is still preferred and new sells low. There is little bran in sight and it is firm, though the slack demand prevents change. There is a fair trade in beef and mutton, which are unchanged. Veal is higher. Hogs are not changed, though the market is unsettled, as Chinatown is in an ugly mood because of plague measures. Choice butter is steady and other sorts weak. Cheese is doing well. Eggs are quiet and the consumption reduced. Eastern poultry is in excess; thirteen cars in two weeks is too much. Home-grown fowls are forced out and Eastern are selling below their equivalent value where they came from. Staple vegetables are unchanged. Good early peaches and apricots are selling fairly; cherries have advanced. Oranges are quiet; some Valencias are going to Alaska. Wool is still quiet. Buyers are looking around, but doing little. Foreign sales are favorable and more life is expected here next month.

Keep the Farmer on the Farm.

TO THE EDITOR:—I am so deeply impressed with the good sound sense, truth and valuable advice in your leading article on "A Contrite Banker," that I desire to suggest that you take measures to bring it to the attention of every banker in the State. I believe that if this can be done it may result in opening up a new avenue of thought and lead those engaged in banking pursuits to adopt some new methods that may result in good to the farming communities of California.—SUBSCRIBER, Sonoma county.

TO THE EDITOR:—I have just read your article on "A Contrite Banker." It is good; very good and timely, and should have a large reading. Your advice to the banker to "keep the farmer on the farm" is sound to the core.—SUBSCRIBER, Orange county.

These are but two of a number of the notes which have come to us from appreciative readers, approving the proposition that bankers should assume a different attitude toward their agricultural clients—that it should be more humane, more discriminating and more consistent; that the banker's policy toward the farming interests should be wisely constructive and not destructive, and that the eviction of the farmer should be a matter of the rarest possible occurrence, because it is for the interest of the banker and of the public as well that this should be the case. Our kindly readers are disposed to credit us with these views and bestow praise accordingly. It is true that we do hold them steadfastly, but we desire to emphasize the fact that their declaration in this instance was made by a country banker at a meeting of the Bankers' Association and we merely approved them and counted them of special significance because they seemed to indicate a change of heart at least in some corners of the banking institutions of the State.

The matter is of such importance and promise that we recur to it and desire to promote discussion of it upon all proper occasions. It is not merely a personal question, though it has the most dramatic individual applications, as all readers know. We take it up upon its widest economic basis and not as a plea for individual sufferers. The two gentlemen who wrote the notes which we print above are not sufferers from bankers' wrongs. They are well-to-do citizens who have no personal complaints to make. They view the subject broadly from ample opportunities for economic studies and observations, and we count their communications the higher because they do not arise from suffering which engenders prejudice.

The relations of bankers to their agricultural patrons are too often discussed with great heat and result in mutual denunciation. This being the case, neither party is able to see his own responsibility and his own sins and condemns the other for all losses and hardships. That an association of bankers should calmly receive an arraignment of themselves by one of their number is a very hopeful fact, and we shall do what we can, as suggested by our correspondent, to bring the knowledge of this unusual occurrence to all who are interested in bank management in California.

The policy of keeping the farmer on the farm until the last possibility of his recovery of financial status has faded away is, we believe, sound as an economic proposition wholly apart from any humane motive. It may be pertinent to enlarge upon a few things which minister to this end. In the first place, perhaps, bankers have promoted expansion in farm policy unwisely and have thus led men on to ventures which have resulted in their eviction. We have suffered for the last two decades because of the promotion of the boom spirit in agriculture. This is commonly understood to mean purchase at inflated prices, with the losses resulted from return to normal values, but this is only one of the evil features of the boom procedure. The recourse to wild speculation has wrecked many men who had at the beginning clear title to large acreages of splendid land. They were charged with the boom spirit until they became wild in expensive plantings and buildings and other outfits the extreme profitability of which they could readily demonstrate on paper, and which they indulged in because lenders became also wild and offered them use of money for the most lavish expenditures. The result was that men made large investments in new lines of production of which they had the least knowledge, and from which they cherished unreasonable anticipations of return. Capitalists lost their heads and forsook the conservative policy when they should have retained it, and they have lost heavily,

no doubt, for their lapse from banking virtue. The banker, then, is to blame in thousands of cases for allowing the farmer to become a speculator of the wildest sort, and thus unsettle himself upon his holding. While this was going on moderate help was denied to thousands who could have made good use of it by gradual increase of equivalent in lines of production which they thoroughly understood.

It was a common comment some years ago that our banks were ready to put thousands in great schemes drawn by some big-headed planter or developer, while a few hundreds were denied to borrowers who could make good use of them. Thus, instead of building up a good permanent business in modest loans which were safe to the bank and useful to the borrower, the banker emerges from his wild indulgence in large ventures with his books full of the descriptions of foreclosed real estate and his mouth full of cursing for farming in general. The lesson from such experience should not be one of condemnation for legitimate agriculture, but rather one of contrition for unwise indulgence in expansion schemes which are not legitimate or reasonable farming. We believe, then, that money lenders must accept part of the blame for the extravagance and over-reaching which characterized too much of our efforts at progress a few years ago. Improvement and a return to a better basis have been experienced more recently, and mortgages have been released in enormous volume because the farmer, when not too deeply submerged, was able to struggle to the surface. Bankers who have helped him by leniency and by reducing the rate, have the satisfaction of seeing their money back again in their coffers and the farmer still on the farm, while those who have nervously and hastily foreclosed have property which they can neither use nor sell to advantage.

It seems to us clear that the banker's effort to keep the farmer on the farm should begin by discouraging him from plunging. The banker should be a strong, conservative and constructive agency in the community. He should be as frank and fearless in advice in his line as the preacher and doctor are in theirs, and he should be as gentle with the sinner as these professional men are. Many land owners need words of caution to enable them to resist the exhortations to rush into "good things" either by those who are interested in purveying supplies or by those who simply have general convictions without interest or knowledge. Some men need to be held back when they want to borrow money to plant hundreds of acres of good things, when they do not know the first thing about growing them or how to handle them when grown. Many men need to be repressed when they are impelled to build a boom creamery or to buy a whole herd of cattle, when they have never mastered the problem of a single cow. Many men are simply children and should be held back from the glowing torches of boom farming, because they will surely burn.

As a constructive agency in the community the banker can settle the farmer more firmly on the farm not alone by denying funds for wild ventures, but by furnishing it in reasonable amounts, and at living interest rates, for such improvements as he thinks his client can understand and handle effectively. The experience of older countries is that agricultural credit, wisely placed and humanely administered, is a powerful aid to general progress and to individual prosperity. For this reason some governments arrange for loans to farmers through wisely planned institutions of credit. We have no such paternal system in the United States, but there is no reason why our capitalists, who, in fact, stand in something of a paternal relation to the industries of every community, should not profit by the experience of the older systems. Our farms need improvement; our farm products need diversification, both for home use and for advantage of sale. Our farmers need fuller knowledge of these things, and they often need a little financial help to enter upon them wisely; but that does not mean that capital should be free for speculative rushing after things which are not of demonstrated feasibility and advantage. Help the land owner to plant such acreage of suitable crops as he has knowledge and ability to handle; help him to make a start in improved live stock, which will multiply as his knowledge increases and as their profitability is demonstrated; help co-operative enterprises, not for projects too large or ill suited to the land or the people, but for economical production and handling of the best staple products. If our bankers would give more time to the careful study of these things and of their relations to their promotion, they would themselves get better returns for their time and their capital, and they would at the same time be most potent promoters of the public welfare.

QUERIES AND REPLIES.

Wire Worms in Beet Fields.

TO THE EDITOR:—I find that worms at the roots are destroying many sugar beets. I send you a sample. Are they what are called "cut worms"? What can be done for them?—GROWER, Santa Maria.

The worms which you send are admirable specimens of the "wire worms." They are not "cut worms," which are fat, greasy looking grubs, while these are slim, tough and long. These worms turn into beetles—beetles which have a way of snapping, or flopping themselves over with a jerk when they are laid upon their backs. Boys sometimes call them "skip jacks." Wire worms are a very grievous pest of very many kinds of vegetables and very difficult to reach because they occur in the ground and work on the roots. In garden practice they are kept away by the use of soot, or by light applications of nitrate of soda, which is readily dissolved and carried into the soil. This is expensive and hardly practicable on a large scale. Fields infested with wire worms have to be fallowed or turned to some other crop for a year to allow the soil to be rid of the worms by natural process. We are sorry that the knowledge of this pest does not admit of a prescription which would be practicable and profitable on a large scale.

Polish Wheat.

TO THE EDITOR:—I send a sample of a grain which is said to be new and very valuable and productive; also some meal made from it. What can you tell us about it?—DEALER, San Francisco.

The grain which you send us is not new. It is Polish wheat, sometimes called "Wild Goose" wheat, sometimes, also, "Egyptian" or "Mummy" wheat, because it is claimed that seeds have been found in the mummy cases, having been preserved from remote ages. The probability is, however, that the mummy cases were salted with the wheat by the guides for the entertainment of the tourists, to whom they made sale of the wheat. It is a very hardy grain and probably makes a very large yield. Its value is for macaroni, and no doubt a certain amount could be sold to a good advantage to the macaroni makers; in fact, it was announced by the Department of State at Washington some time ago that European macaroni makers needed very much more wheat of this kind and were willing to import it from foreign countries at a rate which should be profitable to the growers. It is a very valuable food grain, because its contents of gluten are so much greater than the starchy wheats which are chiefly grown in this State. We understand that it is not satisfactory for ordinary milling purposes, but that for meal making or for macaroni it is unrivaled.

Lecanium Hemisphericum.

TO THE EDITOR:—I send you some elm twigs infested with a scale insect. Is it likely to spread to fruit trees, and how can it be stopped?—D. A. L., Bakersfield.

The elm twigs which you send are infested with the Lecanium hemisphericum. It is also found upon fruit trees a certain extent, but is not so destructive to orchard growth as some other scales. It is, however, reported as injurious, especially in southern California. Like other lecaniums, it is rather a hard insect to kill, because during the winter time, when the trees are free of leaves and easily sprayed, the insect is closely sealed down so as to be little injured by applications. The same treatment which they use in the south for black scale and other lecaniums—that is, by fumigation—would be the best treatment for this one, but that involves considerable expense. The young insects are now coming out quite freely from the scale, and in about a couple of weeks it would be a good time to attack them with a thorough spraying of kerosene emulsion. This can be done without injury to the foliage of the tree, and is quite destructive to the scale while they are moving freely.

Diseased Fruit Twigs.

TO THE EDITOR:—I send some twigs from my orchard in Nevada county. Why do they have such bad appearance?—ORCHARDIST, Grass Valley.

The twigs which you sent show some things which are easily understood and some which are quite obscure. What seems to be the most conspicuous trouble, that which is shown by the blackening of the

leaves, is a blight of the pear and apple which is commonly known as "scab." It occurs on the fruit, on the leaves and also attacks the young wood. The best treatment is winter spraying with lime, sulphur and salt wash, followed by the use of Bordeaux mixture as soon as the leaves are seen to have a smoky appearance and before they have the blackness which your sample shows. Aside from this there seems to be some difficulty about the starting of the growth on some of the twigs which you send. This does not seem to be due to this disease, because the bark is not unhealthy. It seems to be a die-back from some unfavorable condition in the soil, either from a lack of drainage or from lack of moisture during the growing season, for it is a strange fact that both of these conditions produce the same effect. Lack of drainage causes the fine roots to rot; lack of moisture causes them to dry up, and in either case the sap supply of the tree is insufficient and an unhealthy and very scanty growth appears, and the branches die back.

Lemon Products.

TO THE EDITOR:—How is lemon extract made and how can lemon juice be kept from spoiling?—GROWER, Porterville.

Lemon extract is usually made from lemon oil; a very small amount of lemon oil being used and a considerable amount of dilute alcohol; the strength of the extract naturally depends upon the amount of oil that is used. Lemon oil is secured by a slight squeezing or abrading of the rind, the oil being absorbed by a sponge and afterwards squeezed out. Cheap lemon oil is made by crushing the peel of the fruit and afterwards distilling the juice with water. Lemon essence is also produced when the peel is squeezed. Pressure forces both the oil and the essence from the cells of the skin, the oil rises to the top, the dregs settle to the bottom and the essence remains between the two. It needs alcohol, however, to preserve it. Lemon juice can be kept from spoiling by adding 5% of alcohol.

The Purple Scale.

TO THE EDITOR:—I find on a small orange purchased in our market here a scale resembling the oyster shell bark louse of the apple. Is it true that this scale also occurs on the orange?—READER, Olympia.

The scale which you find on citrus fruit, and which so closely resembles the oyster shell bark louse, is what is known as the purple scale of citrus trees, and is Mytilaspis citricola, while the oyster shell scale of the apple is Mytilaspis pomorum. Though these scales are so similar that they can only be distinguished by an expert, we have never known of the apple species taking to the orange, nor the orange species occurring on deciduous fruit trees.

The Public Land Laws.

TO THE EDITOR:—Have the homestead laws changed or not, and if not, what are they? Is there any level land on the Colville reservation in Washington?—SUBSCRIBER, Morgan Hill.

These laws are changed from time to time, and the way to secure information, not only about the laws but the ways to proceed to get the benefit of the laws, is to purchase a copy of "Copp's Settlers' Guide," which is frequently revised to meet all changes. It can be ordered from this office for 25c. As to the reservation mentioned, inquiry must be made at the nearest land office. The "Guide" shows all such things.

Prune Aphis and Red Spider.

TO THE EDITOR:—Enclosed please find a twig taken from a prune tree which has become pale and is infested with green lice. Is it the insect which is mentioned in the PACIFIC RURAL PRESS of May 5th as syrphus flies and prune aphis? I also send a spur cut from an almond tree whose leaves are becoming nearly white in the center, though the tree is well open to air and light.—F. E. ROBINSON, St. Helena.

The insect on the prune is the aphis mentioned in the answer you refer to. The insect on the almond is the red spider. Spraying with pure water, followed by blowing fine sulphur through the tree, is the best treatment for it.

Fine Six-Rowed Barley.

TO THE EDITOR:—In your issue of the 5th inst. I notice the communications of Hans C. Holm, brewing expert, on the subject of six-rowed barley. I have been raising this variety of barley the past few years,

and have been trying to induce my neighbors to raise the same, but with more or less indifferent success. I raised from 27 to as high as 37½ sacks per acre last season. I have a fine field of it this year, and send you some sample heads by this mail. I am confident this variety will produce from six to ten sacks per acre more than the common kinds. Should any of your readers desire to obtain six-rowed barley for seed, I could accommodate a limited number. If the farmers would raise this variety of barley for export brewing purposes, I think they would find it much more profitable than the cultivation of wheat, which comes in direct competition with such a vast productive area of nearly every country of the world.—W. H. CROOK, Butte City, Glenn Co.

It is a very fine sample of six-rowed barley, and we will bring it to the attention of the brewing experts.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 21, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

SACRAMENTO VALLEY.

Warm, sunny weather during the week has been favorable for cutting and curing hay, and for maturing the grain and fruit crops. Hay is of excellent quality, and in some sections the yield is above the average. Barley harvesting has commenced in a few fields, and will be general within a week or ten days. Wheat and barley are ripening rapidly, and prospects continue good for large crops. The dry north wind on the 18th and 19th retarded the growth of late grain in some localities, but otherwise was not injurious. Deciduous fruits matured rapidly, and nearly all varieties are in good condition, with indications of a large yield. There will be a large crop of peaches in Butte county. Oranges are looking well.

COAST AND BAY SECTIONS.

The weather has continued favorable for the development of grain and fruit, with the exception of drying winds on the 18th-19th, which in localities caused grain to shrivel to some extent. Haying has progressed rapidly; the yield is comparatively light in the south and heavy in the north; the quality is excellent. The late rains materially improved the condition of grain, especially in the southern coast counties, and though in some sections the crop will be below the average, prospects are much better than they were a month ago. Hops are making good growth. A large acreage of corn has been planted in Sonoma county. Deciduous fruits are ripening in all sections, and will yield well except in places where injured by late frosts.

SAN JOAQUIN VALLEY.

Generally clear and warm weather prevailed during the week, with brisk northerly wind the latter portion. The rain of the preceding week greatly benefited the grain and fruit crops. Late sown grain is filling well and all grain is ripening rapidly. Haying progressed during the week and the greater portion of the crop was harvested. Barley will be ready to cut in many sections the coming week and the prospects are for a large crop of extra quality. Pasturage is generally reported better than for many years. Fruits of all kinds are doing well and indications are for a large crop. Olives are in bloom in some localities. Rivers are full, furnishing plenty of water for irrigation purposes.

SOUTHERN CALIFORNIA.

Warm days and cool nights, with considerable cloudiness and light fogs, have been generally beneficial to growing crops. In some sections, however, the growth of berries and deciduous fruits has been somewhat retarded. Grain, hay, pasturage and orchards continue to show the good effects of the late rains and the water supply is good. Peaches are very backward, and other deciduous fruits are not maturing very satisfactorily. Apricots will yield a very light crop. Walnuts and citrus fruits are looking well. There will be a heavy yield of potatoes.

EUREKA SUMMARY.—Crops are in good condition and progressing favorably. Some oats are heading. Grass and clover will be soon ready for cutting. Strawberries are below average. Vegetables are backward, but making satisfactory growth.

LOS ANGELES SUMMARY.—Though warm the first of the week, which dried ground quite fast, generally good, growing weather prevailed. Late grain, young fruit and trees made fine growth, except peach trees, which are leafing slowly.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, May 23, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Minimum Temperature for the Week		Maximum Temperature for the Week	
					Average	Range	Average	Range
Eureka.....	.01	48.58	33.43	42.72	46	58	58	58
Red Bluff.....	.00	22.87	20.08	25.78	56	80	80	80
Sacramento.....	.00	20.28	14.07	19.89	52	92	92	92
San Francisco.....	.00	18.42	16.00	22.13	48	70	70	70
Fresno.....	.00	10.14	7.18	8.64	96	54	54	54
Independence.....	.00	3.66	1.21	4.54	54	88	88	88
San Luis Obispo.....	.00	17.30	16.41	16.67	44	88	88	88
Los Angeles.....	.00	7.83	5.01	17.05	52	82	82	82
San Diego.....	.00	5.98	4.96	9.33	58	68	68	68
Yuma.....	.00	1.29	1.34	2.88	62	102	102	102

THE DAIRY.

Care of Milk.

By C. C. RIDGWAY of Clearwater at the Compton Farmers' Institute.

The care of milk is a subject that should be fully understood by all dairymen and factorymen. There has been so much said on the subject that it will be almost impossible to give new points. As long as our dairymen do not heed what has been said, we must keep on impressing it upon them. Being, as I am, directly connected with the manufacture of milk products, I am greatly interested in the care of milk. I am certain that every dairyman should be as much interested as myself, for his success depends largely upon the care he gives the milk.

VALUABLE ENOUGH TO TREAT WELL.—The butter product of this country amounts to a large sum of money—\$300,000,000. The annual product of the churn will buy two years' product of our gold miners. Hence, you see, this is a most important subject, and yet the most neglected by the average dairyman. Before these sessions have closed you will be fully satisfied that our dairymen are very anxious to know what grade of cattle will produce the greatest amount of milk rich in butter fat, and all about how to feed for the same. But you would be surprised to see the manner in which they treat this delicate article after it is drawn from the cow. A large majority of the country dairymen will turn their forty pounds of rich milk into the can without straining it; leave the can set on the ground or in the milk wagon that has not been washed out since the last rain; not taking enough interest to arrange so the air can pass between the can and the floor of the milk wagon. This same careless man thinks you are crazy when you ask him if he stirs his milk after it is milked—wants to know what is the use of that. His milk never taints or sours. If the man at the weigh can turns up his nose when he turns in the milk, the dairyman thinks there must be something wrong with his smelling apparatus. If you tell the careless man that he ought to have an aerator, he says "That costs money. Never used one in my life, and never had any bad milk." He expects the butter-maker to make faultless butter from his tainted and badly-cared-for milk.

In Canada all butter and cheese have to be scored when they go to market, and if docked $\frac{1}{4}$ cent on account of flavor the cheese or butter maker has to lose it out of his salary. In this case I think the dairyman soon finds out it will pay to buy an aerator. The man receiving the milk goes according to his own judgment, and if he thinks the milk off flavor back it goes.

Care of milk begins when the cow is fed—in the morning for the evening milk, in the evening for the morning's milk, and never ceases until it reaches the factory.

The patrons expect the butter maker to make a first-class article. He therefore has the right to expect them to furnish a first-class milk, clean and free from taints and foul odors. There has been some talk of late of trying to close the creamery on Sunday, and some of the patrons are in great distress over the matter. Of course, they expect to lose part of their milk. Well, if they can't keep milk over twelve hours, how do they expect the butter maker to make a butter that will not go off flavor for three or four weeks?

One of the best men in our community, who keeps but one cow, for his own use, who makes better butter and cleaner butter than the creamery, recently wanted to know what was the matter with his cow's milk. He said they could not drink it. Well, the trouble was he had turned her on green barley. Now, if he had been taking the milk to the creamery, instead of using it himself, he would have been insulted if the creameryman had refused his milk.

The time has come when milk need not be handled according to uncertain theories. Science has come in and enlightened us so we now can trace many effects to their causes, and also avoid many objectionable conditions in milk by removing the causes that made them. It is now a well-known and established fact that souring, bad flavor, decomposition and putrefaction in milk are caused by minute microscopic vegetable organisms, called bacteria. So much has been written about them and their action on milk that anyone desiring to post himself can easily find plenty to read about them; and I think dairymen should read up on this subject, for then they can more intelligently care for their milk.

PRACTICAL SUGGESTIONS.—I submit to you the following rules as to the care and handling of milk:

It pays to treat the cow with kindness. Allow her all the pure, clean water she wants to drink and an ample supply of wholesome, succulent food.

The cow should be milked gently, by the same person every time, dividing the time of milking as near as possible. Give her a shade to protect her from the hot rays of the sun when she is resting.

If you want clean, flavored milk, the cow should not be allowed to drink foul, stagnant water.

Do not allow your cows to eat rotten potatoes, turnip tops, bad-flavored weeds or anything that will

impart a bad odor to their milk, unless you want it for your own use.

Milk should not be sent to the factory until the ninth milking after calving, nor the milk of a cow that is diseased or known to be in poor health.

The word cleanliness should be stamped upon the mind of all dairymen and printed with indelible ink on all dairy utensils from the home to the factory.

Milking should be done and the milk kept only in a place where the surrounding air is pure and free from all contaminating odors that would taint the milk.

Milking should always be done with clean, dry hands, and after the teats, udder and flank are wiped with a clean, damp cloth or sponge.

Milk should be strained or aerated immediately after it is drawn from the cow and before cooling. This treatment is of equal benefit to the morning's milk as well as the evening's, and should be continued in cold as well as warm weather.

Simply running milk through an aerator once after milking, without any further stirring, is not sufficient. It should be stirred at least three times at intervals during the evening.

If you allow a greasy, yellow coating to collect in the seams, nooks and crevices of either cans, pails, strainers or aerators, do not be surprised at your milk being tainted or sent home, as you have already sown the germs of putrefaction. This difficulty can be overcome by washing your dairy utensils as follows:

First—The whey or skimmed milk should be emptied out of the cans immediately on their return from the factory.

Second—The cans should be rinsed out with tepid water.

Third—The cans should be washed with hot water, to which a little soda has been added, then scalded with boiling water, after which put them in a clean, airy place to dry. Do not wipe dairy tinware with a dish cloth, simply let them dry when airing. All dairy utensils should be washed with a brush, and the flavor of your milk will go up 10%.

It does not pay to send milk in an old, rusty, dinged can, with the tin worn off, when a few batches of tainted milk sent home will buy a new can. It is not right that all should suffer for the neglect of one.

Whey-soaked cloths on the tops of cans are great distributors of taint in milk, and will contaminate any milk they come in contact with. Their use should be dispensed with by getting covers made to fit the cans.

Platforms of all milk wagons should be scrubbed at least once a week with hot water to free them from the bad smell of the milk and whey spilled on them. A cover over wagons will protect the cans from the sun and rain.

If stables are used to milk in, they should be well ventilated, kept clean and whitewashed. The carcasses of all dead calves or other animals should be taken away and buried early in the spring. All cesspools should be drained and any garbage lying around the yard that would taint milk should be cleaned up and burned.

It is the duty of every patron to build a covered milk stand in a clean place, at least 100 feet away from all hog pens and barn yards. It is not right that all should suffer in pocket and reputation for the neglect of a few.

The patrons having done everything to supply the makers with good, pure milk, it is the duty of the factorymen to make first-class goods. Patrons, step into your factory occasionally and see that everything is neat and clean in and around it, and that there is good cheese or butter on the shelves or in the storeroom. If it is not so, ask why, and if the defect is not remedied insist on a change of maker next year.

San Joaquin County Creameries.

TO THE EDITOR:—The creamery interests of this county have been materially enhanced by the recent completion of the plant of the San Joaquin Milk & Creamery Co. at Stockton. This institution started with a nucleus of three dairies—the Oakland Ranch, Pioneer and Oak Grove. There are five equal shareholders—J. M. Bigger (president), R. L. Wooster (secretary), Cyrus Moreing, Wm. Jordan and W. Hildreth. The plant occupies a building 72x80 feet on the bank of Stockton slough; so that milk can be received and the product of the creamery sent out by water transportation. A barge, towed by a gasoline launch, makes regular trips to the adjacent river landings, returning with milk from the dairies of Mr. Moreing—who has extensive holdings on the river and who will increase his dairy interests—and others similarly situated. The machinery and appliances for the creamery were supplied by the Risdon Iron Works of San Francisco. Everything is on a liberal scale, to accommodate growth in the business. A 15 H. P. electric motor supplies necessary power. There is a set of boilers to make steam for heating and washing purposes. The separator is of the De Laval belt pattern, with a capacity of 3000 pounds milk per hour. There are two large refrigerating rooms, one for butter and one for milk, and an ice plant will soon be finished. As the business grows, a

cheese department and a condensed milk factory will be added. Skimming stations have been established at Ripon and Bellota. Adjacent to the creamery are stables to accommodate the horses employed in delivering; in the building above the creamery room several flats have been constructed for the families of employees. On the lower floor commodious offices have been arranged, besides a retail department, opening direct to the refrigerating rooms.

The Stockton Creamery & Cheese Co., which has had its plant in operation four years, is receiving directly or through sub-stations the product of 220 patrons, aggregating 31,000 pounds milk per day. Most of this comes in the shape of cream from three other stations. The butter from this dairy has a wide sale and the demand constantly exceeds the supply. Chas. A. Stowe is manager of the Stockton station.

At Lodi the skimming station is in charge of J. and J. W. Green (father and son). There are about seventy-one patrons for this institution, the product being 8000 pounds milk per day. The cream is sent to the Stockton creamery.

The Lockeford creamery is run upon the co-operative plan, the fifty-six patrons receiving monthly pro rata settlements, based upon the amount of milk supplied by each. The returns have been very satisfactory. The market for butter from this creamery is mainly from Calaveras and Amador counties. About 9000 pounds milk per day is furnished by patrons. The creamery plant is stationed in a brick building, formerly used as a hop dryhouse, and the Mokelumne river bottom lands, once given up to the growth of hops, are now largely covered with alfalfa for dairy stock. W. S. Allen is in charge of the creamery.

H. G. P.

THE POULTRY YARD.

The Poultry Business in California.

TO THE EDITOR:—I am thinking of going to your State and engage in the poultry business in quite an extensive way. Do you think it can be made profitable? What I have read about the poultry business, prices, etc., in your State, and with the mild climate, and natural conditions you have, it occurs to me it is the place for the business.—NEW SUBSCRIBER, Athens, Ohio.

As you proceed with your reading of the PACIFIC RURAL PRESS you will find much information along these lines and suggestions of direct value under the somewhat peculiar conditions which prevail here. There has recently appeared in an Eastern poultry journal a letter by a Californian which is interesting as an exposition of local experience.

A great deal has been said about the raising of poultry in southern California, and such questions as: "Will it pay here?" "Is the climate suitable?" etc., are being asked by those who are beginning to realize the great demand there is in this State for poultry and eggs.

California does not begin to supply this demand. Carload after carload of these products are shipped in from the Middle West. The demand has been steadily increasing year after year, and good inducements are offered to those thinking of raising poultry for market. Why should poultry and eggs be shipped into this State? Surely we have room and grain enough to grow our own.

GRAIN FOOD.—As to poultry paying in California, I do not think that any one who has looked into the matter carefully will hesitate to say that it does. For the last few years grain has been very high, wheat costing about \$2 per cwt., and corn \$1.75, while the prices of barley and oats have been about the same as that of wheat. [These must be retail prices at some point where crops failed through drought. The wheat and barley prices given are about twice the present wholesale rates.—Ed.] But biddy has held her own through these trying times, and many a ranchman has been tided over a dry year by a good flock of hens, which he is now giving as much care as he gives his horses or cattle. In the years when rain is abundant corn can be grown at very small cost, and can be bought by poultry keepers not in a position to grow it for about \$15 per ton, and the prices of other grains range accordingly.

GREEN FOOD.—What sometimes keeps an Eastern poultry man guessing is how to have green food for his birds all winter. In this State any ground on which you can get enough water to raise anything at all will keep your hens on green stuff all the year round. If you have not room to grow your own market truck you can get all you want of it, when it is a little wilted, from the Chinese gardeners for a mere song.

BUILDINGS.—In regard to buildings we have a decided advantage over our Eastern brothers. We are not obliged to put up such expensive houses, nor is it necessary to cover or inclose the scratching pen. Lumber, inch stuff, is worth about \$18 per 1000. This we take to the mill and have made into half-inch boards. Of these we can build, at a small cost, houses which will keep out the worst weather we are likely to have. Of course it is necessary that they be waterproof. For windows we can sometimes get misfit frames cheap and put the glass in ourselves.

A very cheap house can be built of shakes—thin boards of redwood, 3 inches wide and $\frac{1}{4}$ inch thick, used in place of shingles.

MARKETS.—The markets of California differ from those of the East. Instead of poultry being killed, dressed and sold at so much a pound, the poultryman takes in a crate of live fowls for which he gets so much apiece, or a dozen. If they are nice large ones he may get \$6 a dozen for them. Too often he brings them in unsorted, hit or miss, when a little care in grading them would make quite a difference in his profits. These birds are kept by the dealer until some one wants one, when it is killed and dressed to order while the customer waits.

-BROILERS.—At present there is no particular inducement for the poultryman to raise broilers, as they are sold much the same as the others, but I think that a market could be made for them. While the tourists are in California they naturally want the best of everything. They do not stop at 50 cents a box for strawberries in December, nor would they at a good fair price for a broiler fattened on the best of green food, and not allowed to run until every muscle is developed like a whipcord. The best hotels are always willing to pay a little higher price for something they know is first-class. Eggs are always in demand, and the prices compare favorably with Eastern prices. Last year eggs bought 32½ cents a dozen, and this price held for over three months. Then the price dropped 2 or 3 cents at a time, until in the summer it was as low as 12½ cents a dozen.

CLIMATE.—There is much to be said in favor of the climate. There are no frozen combs or wattles here. The drinking fountains do not have to be thawed out every morning in winter. The hot mash does not freeze stiff while you are feeding it. The chickens have a chance to run out almost every day except during the heavy rains; then it sometimes keeps us moving to keep the houses dry, as the cheaper ones are liable to get damp in spite of you. One thing which is very necessary and is very often neglected here, is the matter of shade trees. Fowls never need shade more than they do in this part of the country, and there is no reason why they should not have shade in every yard. There are several varieties of shade trees which grow very fast if cared for. The pepper tree, a large tree with drooping branches, which will furnish shade for a whole yard, is one of the best of these.

Many ranchmen claim that it is harder to raise chickens in this continuous hot climate than in the East; that the young chicks die off in large numbers when they get to be a certain age; also that the lice plague is something terrible. (This when the hen is a mother rather than an incubator or brooder.) When you ask what the trouble is, you are generally told that their heads swell up and they just die. Now I do not think that this can be fairly laid to the climate. Look into the chicken houses of these people, into the nest boxes, and all along the roosts, and you will probably find the true cause. The houses are dirt and filth from one end to the other. No care has been taken to keep them clean, sweet and wholesome; this, not the climate, is the cause of the roup, the swelling of the head which prevails. An ounce of prevention, a little cleanliness in the first place, and all this trouble could have been avoided. You would not think of putting horses or cattle into a house where the manure had been piling up for a year. Why not give the chickens the same care?

Some Poultry Computations.

O. W. Mapes, in the Poultry Monthly, says he has kept more than 1000 hens each year for five years, and compares the possible and probable profits of keeping cows and keeping hens. He estimates that 2000 good but not fancy bred hens would cost at first outlay about the same money as 20 cows. A cow barn for 20 cows would cost in Orange county, New York, from \$1500 to \$2000. The same money would erect buildings of equally good material, style and finish for 2000 hens. He followed the separate colony plan and kept 40 hens in each house of 10x10 feet, and has kept 50 to 60 in a house, and could not see but that they did as well as when only 20 were kept together. But at 40 hens to a house he would need 50 houses for 2000 hens, and the price of the cow barn would allow \$30 to \$40 for each house.

He allows for feeding the cow one and one-half tons of hay, \$18, pasturing five months, \$7.50, and one ton of grain, \$18, a total of \$43.50 per cow, and \$875 for 20 cows. He finds by actual experience that it costs about 65 cents a year to feed a hen, or \$1300 for 2000, \$425 more than for the cows.

But what are the cash returns? He has had one hen lay 230 eggs in a year, but he puts such a hen in the class with cows that produce 5000 to 6000 pounds of milk a year, as not easy to be found or to be bought at low prices. He thinks not every farmer could pick up a herd of 20 cows that would yield a product worth \$60 a year, or \$1200 for the 20 cows. He then places the probable yield at 8 to 10 dozen eggs in a year. For five years his egg product from 1000 hens has never been less than

\$1.50 per hen in a year, selling at 18 to 20 cents a dozen in Orange county, although many of his hens are kept until five or six years old. This, then, would be an income from eggs alone of \$3000 from 2000 hens, or \$1800 more than from the 20 cows, and, after taking out the \$425 extra feed, a profit of \$1375 more than that made on the cows.

Imports of Poultry.

C. H. Markham, the general freight agent of the Southern Pacific Company at Portland, Or., in an interview in the Oregonian says: During the year 1899 there were shipped from Kansas and Nebraska to California over the company's lines 224 carloads of poultry. The handling of these shipments requires cars of special construction, for which a heavy rental is charged in addition to the freight rate. The loss in transit is considerable, as is also the cost of feeding and expenses of a man in charge.

The rate from Kansas and Nebraska to California is \$1.75 per 100 pounds, or \$350 per car. The average number of chickens to a car is about 4000, weighing about four pounds each, but the freight charge is based on a minimum of 20,000 pounds. The cost of laying a shipment down in California is not less than 3 cents per pound, equal to 12 cents per chicken, or \$1.44 per dozen.

HORTICULTURE.

The English Walnut in the Sacramento Valley.

By WALTER G. READ at the University Farmers' Institute at Colusa.

Since tree planting began in the Sacramento valley many efforts have been made to grow the English walnut, but of the thousands that have been set out very few have rewarded the planters with a sample of the fruit.

The trees have usually been obtained from the nursery when one or two years old and planted in the orchard or dooryard in the same manner as fruit trees or shrubbery. If well cultivated they started out and made a vigorous growth during the first season, but when spring time came most of the tops and oftentimes a part of the main trunk was found to be lifeless, and Jack Frost was credited with having been too severe for the tender branches to withstand. With the hope that less freezing would occur during the coming winter, the dead wood was cut away and the usually unbalanced trunk again put out new shoots. These stimulated the renewed hope which was again blighted when the die-back was discovered the next spring.

GRAFTING ON BLACK WALNUT.—This I found to be the almost universal experience of those who attempted to grow English or French walnuts in this valley. When ten years ago I planted an almond orchard $4\frac{1}{2}$ miles north of Colusa I also at that time planted a few trees each of chestnuts, pecans and English walnuts and a row of the native black walnuts $\frac{1}{4}$ mile long. I planted the black walnuts 12 feet apart, with a view of having a fine row of shade trees along the county road. It was the following year that I heard that if the English walnut was grafted into the root of the native walnut the tree would be hardier and less liable to be winter-killed. Acting upon this theory I root grafted each alternate tree in my native walnut row to the English walnut. I succeeded in getting nineteen trees started and they made a fine growth during the first season, but, as I at first supposed, the tops were frozen during the following winter. It was while cutting away the dead wood from these trees that I observed the peculiar nature of the die-back. I found that the south and southwest sides of the trees were most affected, and that many of the limbs were alive from 2 to 6 inches higher on the north side than on the south side. I soon concluded that this die-back could not be caused from freezing, and after a year of close observation I was convinced that instead of severe cold it was intense heat that had caused the damage.

AN INSTANCE.—About five years ago, while visiting an orchard in Yolo county, I saw a walnut tree that had been top grafted. It was then about 8 inches in diameter at the base and stood not less than 30 feet high. The trunk and root of this tree were of the native black walnut stock and the limbs and whole top were English walnut stock. Many nuts could be seen among the unusually heavy foliage. About 200 yards distant from this tree stood a dozen straight stock English walnut trees which were not less than twelve years old. They had suffered from year to year with the die-back, and the dwarfy, irregular shape and appearance of these trees showed up in striking contrast with the healthy, vigorous growth of the top grafted tree. This tree stood near the well and, upon inquiry, I found that all its rapid growth, vigor and freshness was attributed to the fact of its receiving the waste water from the well. I was willing to give due credit to the water, but my

study of that tree and experiments made since convince me that I was right when I then asserted that I believed the top grafting was the principal cause of that tree's thriftiness.

EXPERIENCE.—The following February I top grafted six trees. Having had but little experience in top grafting the walnut, my work was only a partial success; but few of the scions grew. I succeeded in getting a growth on only three of the trees. These top grafts are now four years old. They each bore a few nuts each year and they now promise a heavy crop for the coming fall. There is more English walnut growth on these four-year-old top grafts than there is on the nine-year-old trees grafted into the root. Two of these top grafts are in a pasture where the trees have received no cultivation since grafts were put in, and while they are growing vigorously, with no sign of die-back, six English walnut trees in the same pasture, which were grafted on native walnut roots, and which were five years old at the time I ceased cultivating them, have died clear to the root, and these roots are now sending out new growth of black walnut wood.

OTHER INSTANCES.—There was a party—I cannot obtain his name—who came through this county four years ago, carrying English and French walnut scions, and who top grafted them into the native walnuts where he could induce parties to have it done. Some of his work was a success. Mr. George Sutton of Maxwell had some grafting done by him and has several very promising trees, which bore a few nuts each last year. Mr. Dooling of our town had a tree grafted which is a fine specimen of top grafting. When three years old this tree produced seventeen pounds of nuts, and last year, at four years old, Mr. Dooling exchanged the product of this tree for three sacks of flour.

Quite a number of native walnuts have been top grafted to the English and French walnut near Colusa this spring. Mr. W. S. Green has had a tree grafted on which the French walnut scions are beginning to grow. That tree could not be purchased to-day for \$100 in gold coin.

I am fully convinced that top grafting is the only way to successfully grow the English or French walnut in this valley. Nature has provided the trunk of this native walnut tree with a thick, corky bark, a non-conductor of heat, which protects the sap as it flows upward until it reaches the limbs and branches of the tender-skinned English walnut growth. Here the foliage continues to shade the limbs and the sap makes the complete circuit, and there is no dead wood at the top, while on the other hand, if the tree trunk be of the English walnut stock, whether on English or native walnut root, the bark is so smooth and thin that during a few hot days in August or September the sap is absorbed before it reaches the branches, and they perish. This is the whole secret to the cause of the dead wood seen on English walnut trees. In an article written for the PACIFIC RURAL PRESS about a year ago I stated that if the root-grafted trees were given an abundant supply of water they would escape the die-back, but since I have seen the dead limbs in the tops of the trees around the residence of J. B. Cooke, the proprietor of our city water works, I must conclude that water will not do to depend on in this case. My conclusions, therefore, are: If you wish to grow English or French walnuts plant the native stock. Plant the nut or set out the one-year-old tree; either will grow and do well on any soil where other trees will thrive. Cultivate them well for three or four years at least, then graft on the English walnut.

How to Do It.—The scions for this grafting should be cut from the trees in January, when they are perfectly dormant. Take only the last year's growth and select from it the choicest stock. Insert about 4 inches of the cut end into mellow earth in a shaded place and let them remain there until you are ready to graft. About the middle of February I find to be the best time for top grafting. Cut off the main limbs about 8 or 10 inches from the trunk, leave one or two of the smaller limbs so that the decapitation will not be too keenly felt, put from two to four scions in each limb, thoroughly wax all parts not covered by bark, and bind the rim of the limb with strips of strong cloth. These must be cut away or loosened as the scions begin to grow and become well set.

It is surprising when one rides through the valley and observes the available stock now ripe for this work. Scarcely a farm has less than a dozen native walnut trees growing around the house and barn, while in many cases long driveways are shaded by their healthy foliage. It is estimated that if the native walnut trees in the town of Colusa were transplanted into an orchard it would take over 100 acres to contain them. These trees are all available and will, I believe, in the near future be converted into English and French walnut-topped trees.

If all the walnut trees of Colusa were thus grafted they would, when ten years old, produce a Colusa & Lake trainload of nuts yearly. No one knows how old the native walnut will live to be. I cannot find where one has ever died. The oldest of these trees are the most vigorous, and these facts are among the strongest points in favor of promoting this work. All that is necessary now is action, and in a few years, instead of the products of these noble trees being gathered and dumped as garbage, their fruits

will be sent out to the world as a valuable luxury, and the Sacramento valley will have added one more item to her already numerous profitable industries.

FLORIST AND GARDENER.

Seasonable Suggestions.

George N. Tyler, the Alameda florist, says that around the bay it is still time to start chrysanthemums.

Before taking the cuttings give the old plants a thorough spraying and watering. Make cuttings of two eyes, and leave on the leaf of the top eye. Insert the cutting in sandy soil, so that the top of the soil is level with the surface. Water thoroughly two or three times a day. Cuttings can be put in from now till the middle of July, and they will produce good flowers.

Smilax will soon be coming into growth. The old growth should be cut back and the roots covered to the depth of an inch or an inch and a half with half-rotted cow manure. Do not use green manure or the new growth will burn. They should be watered regularly, and as soon as the new growth appears should be given strings to run up on.

Sweet peas are now in full bloom and the flowers should be picked off, for the forming of one seed pod exhausts the plant more than the production of 100 flowers. Mulch the roots with stable litter or clippings from the lawn, and spray the foliage at least once a day to keep down red spider. The spraying should be done in the morning. Do all your watering in the morning, and never spray your plants after noon, for they will not dry off before night, and this may cause mildew.

Coleus that were started early should now be in 5-inch pots. Use plenty of leaf mould and give a liberal sprinkling of bone meal in the soil. They like a sunny window and must have thorough drainage or the leaves will drop. They are never troubled with mealy bugs if the foliage is sprayed regularly.

Pelargoniums are now in full bloom. This plant does not require very rich soil and should be kept on the dry side. If kept too wet the foliage will shrivel up, and if given too rich soil they make all foliage and no flowers. The foliage or flowers should never be wet, for if you wet the leaves the water forms drops on them, and these drops are what does the damage. They act as burning glasses, and small holes are burned through the leaves.

House plants will dry out fast these long days. Watch them close and never let the plants get wilting dry. Spray the foliage as often as you can find time and you will be rewarded with a stronger and healthier growth. If you have not procured your carnation plants do so at once. There are some grand varieties introduced this year, among them the Mrs. Thos. Lawson, the \$30,000 carnation.

Small greenhouses in which you are growing ferns, begonias and that class of plants should have a heavy shading on the glass, and the houses should be sprayed every morning in bright weather, and on very hot days the woodwork, paths and all absorbent surfaces sprayed two or three times a day to keep down the temperature, for the nearer you can keep the temperature of your greenhouses to 70° the better your plants will do.

PELARGONIUMS.—Pelargoniums can be started from cuttings now and by next spring will be strong, bushy plants. Stand tuberous rooted begonias, gloxinias and such plants on an inverted 5 or 6-inch pot, so that the air circulates around them.

ROSE MILDEW.—A great many of the roses in Alameda are subject to mildew, especially the climbing rose Reine Marie Henriette. It is caused by sudden changes of temperature or from wetting the foliage in the evening, which keeps the plants, or rather foliage, wet all night. If you have a rose planted on the eastern or western side of the house or fence, if on the eastern side it gets the sun all the morning up to one o'clock and is then shaded, and if on the western side it is shaded all the morning, and all of a sudden gets the hot afternoon sun. These sudden changes are bound to cause mildew, or if we have two or three hot days followed by a cold windy one, mildew will form. Mildew is a fungus growth and the best cure is a flour of sulphur. You can get this at any grocery or drug store at a nominal cost. Dust it on the plants by putting a pound of it in a piece of cheese cloth, or an old gunny sack will answer the purpose. Shake the sack over the plants affected in the morning while the dew is still on the foliage. The object of this is to make it stick on the leaves. After the temperature gets 75° or over in the sun, the sulphur on the leaves gives out fumes and these fumes are what kill the fungus and the spores. Sulphur is also good to dust on carnations for all the fungus diseases that infect them.

ROSE LICE.—Aphis or green lice is another pest that bothers roses. The only way to get rid of them is to use tobacco water made by pouring five gallons of boiling water over a bushel of tobacco stems, and after cooling pour off the liquid and add five gallons of water. This tobacco tea should be used as soon after making as possible and is of little value if allowed to stand two or three days, for it will start to ferment

and it then loses all of its strength. The most convenient form to use is the nicotine extract. A pint of the nicotine is extracted from 150 pounds of tobacco. It comes in pint bottles and is sold to nurserymen for \$1.50 a bottle. Use one tablespoonful of the nicotine to five gallons of water. If you use the tea or nicotine it should be sprayed on the plants in the morning for three days running and all the aphids and eggs will be exterminated. It should be used at least once in ten days as a preventive after the plants are clean.

GREENHOUSE INSECTS.—A great many of our readers have small greenhouses and a great many of the houses have lice in them. The only remedy heretofore was to spray or fumigate with tobacco stems. In burning tobacco stems, there is a great deal of ammonia given off in the smoke and this ammonia is what burns the tender growth of ferns heliotrope, etc.

CARNATIONS.—Young plants of carnations should be headed out at once to induce them to make stocky plants close to the ground. If you let them run up and bloom the result will be tall, spindling plants and they will not produce as many or as good flowers as when headed.

AGRICULTURAL ENGINEER.

Oil on Country Roads.

From the report of B. L. BRUNDAGE to the San Joaquin Commercial Association.

There is no doubt of the efficacy of oil on roads. It is greatly superior to water in that, when properly applied, it is lasting, and, further, it makes a desirable road. It coats it with a wearing surface that has to have but slight attention to keep it in proper repair. It builds up the weak places and makes an even surface, while water finds and increases the number of chuck holes. Oil soaks in and remains a part of the road, while mud sticks to the wheels and water evaporates; and what is more important aside from first cost, oil is very much more economical, for it is value received, while water is chargeable only to the expense account.

Oil can be used to lay the dust and to make the roads, while water only can be used to lay the dust and muddy the roads. After properly preparing the roadbed use as much oil as can be absorbed at the first application, and after that a man with a barrel of oil, a load of sand, a sprinkling pot and a tramp, will keep more miles of road in good repair than a dozen could on a cheaply prepared road, or with water carts. Do not try to make a cheap road; make a good road if only a mile long, and make it so well that the silurian cowpath man will not grumble at its cost when he has had the pleasure of driving over it. Do not farm the road, as has been done heretofore. There has been too much farming of roads and no road making. There will be no lasting benefit by trying to oil the whole country; a community will gain nothing by saying that it has a great many miles of oiled roads and then showing the intending settler a lot of half-way oiled cow trails. How much more satisfactory it would be to point with pride to a few miles of asphalt-covered highway, for such would be the case were the work properly done. Roads as generally laid out are too wide to be practicable. Only a small portion of the roadway is used for traffic; the balance is usually covered with weeds and brush, being a detriment and an annoyance to the person whose lands adjoin the highway. A crowned road wide enough for two teams to pass is all that is necessary on most roads in California, and only where the traffic is very heavy should more than that amount of road be worked.

How to Do It.—In preparing a road crown it so that the water cannot collect and stand. After using the grader or scrapers, harrow it over and over until the uneven places are filled, and where water can be obtained wet the ground thoroughly and roll it perfectly smooth; use the road until all weak spots are discovered; fill and roll again, then take a light harrow and scratch up dust enough to hold the oil. Apply the oil hot—not less than 300°; the hotter the oil the better the result. After the oil has been absorbed roll the road until no impression is made by the roller. After using, if more oil should be needed, fill up the depressions with sand and apply hot oil.

Where disintegrated granite or sandstone can be obtained crown the road, then cut out the top 12 feet wide and 6 inches deep, then fill in with the stone. After being thoroughly rolled an even surface will be presented and the stone cannot work out as it would where placed loose on the surface. It costs \$800 per mile to ballast a road 12 feet wide, when the stone is hauled from 3 to 4 miles, and it pays. The stone makes a foundation that will stand the hardest usage, and oil placed thereon forms a coating that prevents holes and preserves the road intact. Water cannot enter the roadbed and destroy the foundation. The best macadam will become rutty where water is used. It could not if surfaced with oil, but to make that surface the right oil must be used. A light gravity oil is not much better than water, on account of its tendency to evaporate. An oil contain-

ing water is but little better; oil and water used together will not make a good road. Heavy oil containing a large percentage of asphalt is the best for road making. It is absolutely necessary to apply at a heat not less than 300° Fahr. The water in the oil will all be evaporated, and if a hot oil is applied the moisture in the ground will be converted to steam and the oil will be absorbed at once. It should be applied during the heat of summer. Do not use a sprinkler, but use a Decamp oil spreader, made on the principle of a seed drill, and have the drills not more than 3 inches apart.

Oil shows the best results on a porous or gritty soil, which absorbs rapidly. On clay it should be harrowed or worked in. It saponifies on alkali soil and runs off at the first rain, unless the road has been well ballasted or sanded. A heavy asphalt oil, from which the water has been evaporated, is the least expensive and most efficient, being at least 30% cheaper than a light oil direct from the well. It is the asphaltum that makes the road, not the lighter substances. There should be enough hot oil applied to thoroughly impregnate the surface, for sand once full of oil will not absorb any more, and a second application would be a waste, unless more dust or sand was placed on the surface in order to absorb the same. A road thus treated would in time become permanent and with very slight care kept in perfect condition.

The amount of oil to use to the mile varies as with the soil. Mr. White of Chino used from 100 to 200 barrels.

FRUIT MARKETING.

The Prune Association.

At a meeting held in San Jose on May 19th and reported by the Mercury, it appears that the contracts do not quite cover the amount stipulated, and a somewhat changed plan must be the basis for proceeding. President Bond stated that about 79% of the bearing prune acreage of the State had been pledged, the highest estimate being not in excess of 82%. About 89% of the acreage in Santa Clara county has been secured.

From President Bond's report, it was stated to be clear that the packers were released from their contract, as the 90% required has not been secured. Of the contracts of growers secured, also, to the amount of about 80% in the State at large, about 23% was with the proviso that 90% of the bearing prune acreage of the State would be secured.

It was suggested that the organization of growers should be retained, and that to co-operate with the association there should be an organization of packers similar to that which has proved so effective for all interests at Fresno. This organization, it was pointed out, could deal with the association as one man under the direction of a manager. This arrangement would eliminate the competition which has heretofore been so disconcerting to the market and disastrous to the interests of the packers.

The directors of the association and the representative packers present all expressed themselves as in favor of the proposed arrangement. It was confidently declared that the growers will agree to the modification, and that many who have not yet signed would do so under the new arrangement.

In accordance with the suggestion made to them by President Bond, the following resolutions were passed by a unanimous vote by the packers:

First—Resolved, That the packers here assembled are in favor of organizing themselves into an incorporation, to the end that they may be able to transact their business with the Cured Fruit Association as an individual.

Second—Resolved, That we agree to modify the provision of the packers' contract relating to fixed prices by eliminating therefrom the clause relating to the same, and agree that prices made by the Board of Directors of the Fruit Association, from time to time, as in their judgment may be deemed advisable.

Third—Resolved, That we are willing to co-operate with the Association under the terms of our contract, subject to the modifications suggested in the foregoing resolutions, upon such percentage less than 90% as the Board of Direction of the Fruit Association shall decide upon.

Fourth—It is agreed that the Association of Packers will buy fruit only from the growers who have signed the contract with the Association, and they will not employ brokers in the East or elsewhere other than those who restrict themselves to handling the goods of the Association.

Fifth—Resolved that a committee of five be appointed to formulate and carry out a plan for corporate organization.

Sixth—Resolved, That William Griffin, Ralph Hersey, A. G. Freeman, A. J. Hechtman, and A. W. Porter as alternate, and F. S. Johnson be appointed as that committee.

After learning the action taken by the packers, meeting President Bond of the fruit association stated that if the members of the association approved of the modifications made in the packers' contract, as expressed in the resolutions passed by the packers at their meeting the association would go ahead and handle the present crop.

Letters calling for an expression of opinion and preference in the matter will be sent to all the members of the association.

Agricultural Review.

ALAMEDA.

FIRST WHITE CHERRIES.—Haywards Journal, May 19: John Obermuller shipped on Thursday the first consignment of white cherries. It consisted of 1500 pounds.

TO BUILD A NEW CANNERY.—San Leandro, May 19: The fruit growers have organized to fight the combined canneries. To-night over 100 leading fruit fruit growers met in San Leandro and formed an association, the object of which will be to establish an independent cannery. The sensation of the evening was when A. Hickmott, who up to a short time ago was a prominent canner, came forward with an offer to invest \$10,000 in an independent cannery. A constitution and by-laws were then adopted, which declared the name of the association to be Alameda County Bay District Fruit Growers' Association. It was set forth that the objects of the association are to oppose the influence of the combine which is at present attempting to lower the price of fruit, and to devise other means for its disposal. The following permanent officers were elected: President, Amzi B. Cary; first vice-president, I. B. Parsons; second vice-president, M. M. Avellar; secretary, Daniel McCarthy; treasurer, C. H. Hale; executive committee, E. J. Holland, J. Sullivan, E. K. Strobbridge, J. H. Begier and B. D. Gray. Fifty growers signed the roll. George Smith, a prominent grower, said that cherries could not be grown at a profit for 2½ cents a pound, the price offered by the combine. Ordinary black cherries could be grown for 4 cents, but for Royal Annes at least 7½ cents should be received. J. H. Begier could not, he said, grow cherries at the price offered by the combine, and it was to the interest of the growers to establish a cannery. As it was necessary to devise plans for the disposal of the cherry crop of this year, it was decided to appoint a committee of three from each district—San Leandro, San Lorenzo and Haywards—to secure an option on as much of the fruit as possible and go with the option to the combine or to any individual canner for the best price obtainable. With 75% of the total output of the county it would be possible to dictate terms. This action was taken and the following committees appointed: Haywards—A. Hickmott, E. K. Strobbridge, William Meek. San Lorenzo—E. J. Holland, George Smith, John Funchon. San Leandro—A. B. Cary, B. D. Gray, M. M. Avellar. This delegation will confer with the canners and see what rates can be had for cherries. They will secure the best terms possible and report back to the association next Tuesday evening.

BELGIAN HARE CLUB.—Oakland Enquirer, May 18: At the monthly meeting of the Central California Belgian Hare Club about fifty members were present. A committee consisting of Dr. W. H. Loomis, W. Tiffany, E. H. Pierce, H. Pittock and Prof. Feight was appointed to arrange details for a show. The following new members were elected: R. L. Wetherbee, R. C. Hackley, Berkeley; D. W. Pratt, J. F. Piries, Oakland; W. P. Giberson, Lorin; D. D. Hayes, M. Reisenweber, Elmhurst; Lewis W. Shiman, San Lorenzo; G. B. Lemon, Salinas; A. G. Roberts, Haywards.

BUTTE.

SCARCITY OF FARM HANDS.—Chico Enterprise, May 17: Farmers seem to be having a hard time securing field laborers, and it begins to look somewhat serious for those who have large amounts of hay. H. T. Bell was in town to-day in search of hands to work in the hay harvest, but was unable to procure them. Mr. Bell stated that he had 500 acres of hay land which would yield near one and three-fourths tons per acre. Unless he can get help this will soon be too ripe. He stated that he would willingly sell the hay standing for \$1.50 per ton, and if he can get help he will put the hay in the shock for \$2.75 per ton, but the great difficulty is in getting a sufficient number of hands, and there are many others who are in just the same predicament as Mr. Bell.

KERN.

SHIPPING RABBITS.—Bakersfield Echo, May 19: Jackrabbits are now in demand. Ninety crates, containing six jacks each, were shipped from Famoso Monday. They will be used in coursing matches in San Francisco. Seventy-five crates were also shipped from Famoso a few nights ago, and during the past few weeks several smaller shipments have been made.

SHEEP SOLD WELL.—L. V. Olcese returned yesterday from Denver, where he disposed of 3000 sheep taken from Bakersfield ten days ago. A part of the muttons were sent forward from Denver to St. Joseph, Mo. Mr. Olcese says he realized

\$5.50 net per head on the entire shipment. The sheep are said to have been among the finest ever shipped from this county.

KINGS.

CREAMERY ENTERPRISE.—Hanford Sentinel, May 17: F. J. Peacock has purchased a twenty-acre tract and will erect a creamery that will cost something like \$7000. The plans include an ammonia plant for cold storage, and the proprietors will import a number of choice milch cows. Five creamery stations will be maintained throughout the county, where milk may be taken and the cream brought here to be made into butter.

LOS ANGELES.

STOCKHOLDERS' MEETING.—Azusa Pomotrophic, May 17: The annual meeting of the stockholders of the Azusa-Covina-Glendora Deciduous Fruit Association resulted in the election of T. H. Knapp, W. C. Hendrick, C. Vaughn, S. C. Heatley and L. L. Ratekin as directors for the ensuing year. At the organization of the board T. H. Knapp was elected president and W. C. Hendrick vice-president and manager. A charge of \$1 per ton will be made for yard privileges at the dryer. The association will have a large quantity of apricots to handle, but prunes and peaches will be very limited.

IRRIGATION EXPERIMENT.—Covina Argus, May 19: A prominent and successful orange grower last year tried the experiment of putting an additional amount of water on a limited amount of 10-year-old orange trees to what had formerly been considered sufficient. This water cost \$3 per hour for 25 inches. He invested in water about \$800. The result brought an amazing increase in the crop, estimated at about twice that of the trees not so irrigated, and proved a very profitable investment. This water was applied to the land slowly, so that not a drop went to waste. Some of the trees so irrigated produced at last picking thirty-four boxes to the tree. He calculates that his investment of \$800 brought him a net return of \$2000 in six months. The land had been thoroughly fertilized with sheep manure and commercial fertilizer, so it was in a condition to stand the extra drain on its resources.

LOS ANGELES.

PACKING FIRM INCORPORATED.—Pomona Progress, May 17: The fruit packing and shipping firm of Loud & Gerling has been merged into a corporation. The capital stock is \$50,000, divided into 500 shares. The directors are Frank Gerling, Edgar S. Gerling, Charles A. Doud, Charles L. Loud and Margaret E. Loud.

PLACER.

FIRST BOX OF PEACHES.—Sacramento, May 16: The first box of peaches sent to market this season was shipped to Chicago to-day by the Penryn Fruit Company of Penryn.

FIRST CARLOAD OF CHERRIES.—Newcastle News, May 16: Monday Schnabel Bros. & Co. sent East the first full carload of cherries from this county. There were 2361 boxes in the car. Last week a half carload went out from Penryn. Shipments have been brisk this week. Last Saturday Wells-Fargo's charges for express shipments reached nearly \$1000. That was the biggest day's business the Newcastle office ever did; 2400 boxes went out on the local alone. The rain of a week ago played havoc with cherries. Many a box that went out reached its destination in bad shape, and the local dealers suffered fully as much as the growers, for most of the fruit was bought by the local houses. The Royal Anns and Black Oregons will soon be in. Dewberries and apricots are expected in market in about a week or ten days.

SACRAMENTO.

SHIPPING STRAWBERRIES.—Sacramento Bee, May 15: The shipping of strawberries has taken a fresh start since the rain. Up to the present time about 19,000 cases have been sent out. The rains caused considerable loss, as a large number of berries shipped north immediately after the rains arrived in a moldy condition. It seems that with some growers and shippers no amount of experience will convince them that certain strawberries will not carry after a heavy rain. W. H. Wason, a leading grower of Florin, says: "The filling of the ditches with water will make a very notable increase in the size of a soft quality of berry in twenty-four hours. This is due to the tendency of a soft-natured berry to rapidly absorb moisture. Hence, as it is evident the greater part of this kind of berry is water, it will, in a short time, either evaporate or sour and mildew. If placed in the sun it will naturally dry up, but if placed in a car where the atmosphere is dampened by the fruit itself it will rot in a very short time. Therefore if a grower wishes to fight shy of red ink returns the

fewer berries he ships after a heavy rain the better."

SAN DIEGO.

LEMON SHIPMENTS.—San Diego Union, May 17: Lemon shipments from this section are beginning to increase and it is expected will continue to do so for some time. The steamer Santa Rosa, which sailed north last night, had about six earloads on board and three carloads were shipped yesterday by rail to the East. There is a good demand at ruling prices. The summer crop promises to be the largest in the history of the county. The recent rains were of great benefit to the lemon trees.

SAN JOAQUIN.

BET CROP ASSURANCE.—Lodi, May 18: For the first time in three years the sugar beet companies which have been experimenting in this vicinity have the assurance of a crop. The past winter and the present spring have been very favorable for the growth of beets, and as a result over 2000 acres in this neighborhood are coming out beyond all hopes. The Crockett Company is said to have contracted for all the available land in the New Hope district for next season.

CREAMERY DIRECTORS MEET.—Lodi Sentinel: At the annual meeting of the Lodi Creamery Association H. Beckman, George Hogan, E. Logan, S. A. Kitchener and J. E. Curry were elected directors for the ensuing year. The books show that \$12,000 had been distributed for milk during the year. A report of the business done shows the association to be in a flourishing condition. It was stated that 230,000 pounds of milk are being received per month at present, resulting in some eighty gallons of cream every day being shipped to the butter making station at Stockton.

SANTA BARBARA.

WALNUT GROWERS MEET.—Santa Barbara Press, May 17: The executive committee of the Walnut Growers' Association of Southern California held a meeting in this city Saturday. The main object of the session was to consider bids for supplying 70,000 sacks. Various bids were received, but none accepted. The matter was deferred until June 23. Other matters of interest were discussed and the crop prospects were reported as fairly good in the various districts. All of the leading southern California exchanges were represented at the meeting.

WALNUT GROWERS ELECT OFFICERS.—The annual meeting of the Santa Barbara County Walnut Growers' Association was held yesterday. There was a full attendance and important changes in the by-laws, proposed by Secretary Kellogg, were adopted. The following directors were unanimously elected: Frank E. Kellogg, George M. Williams, W. N. Roberts, Benjamin Bailard and G. F. Smith. The board of directors organized by electing G. F. Smith president, W. N. Roberts vice-president, Frank E. Kellogg secretary, George S. Edwards treasurer.

SANTA CRUZ.

ORCHARD PLANTING.—Watsonville Pajaronian, May 17: At the rate at which orchards have been planted in this valley during the past three years, it will not be long before the limit of territory for planting will be reached.

MAKING CIDER.—Prettyman & Wolf have engaged in the manufacture of apple cider, in connection with their apple packing business, and they are marketing an article which is said to equal the best New York Pippin cider.

VALUABLE ORCHARD PROPERTY.—L. N. Trumbly has disposed of his productive orchard property at Corralitos through the agency of W. V. Gaffey & Son. The first sale was made a short time ago to A. Von Tienen Janse—thirty acres. Thursday George Sornborger purchased 19.925 acres, paying \$7471.85 therefor; and J. S. Wallace of Winnebago, Minn., purchased the remainder of the tract, a fraction over twenty-seven acres, for \$10,152.75. The price per acre—\$375—for this bearing orchard is considered very reasonable and the annual returns therefrom are a big dividend on the investment.

SOLANO.

FIRST APRICOTS.—Vacaville Reporter, May 19: The first crate of Royal apricots was shipped on May 12 from S. W. Hoyt's ranch. They were consigned by Pinkham & McKevitt to New York.

EARLY CLYMAN PLUMS.—The first shipment of Clyman plums was made May 14 from J. D. Wron's Mizzentop ranch. This is one of the earliest in a very early section. This is ten days earlier than the first shipment of Clymans in 1899. Mr. Wron's crop of Clymans will be at least three-quarters of a full crop, and in this respect he is ahead of many growers in this locality, Clymans not being a full crop this year.

GOOD PRICES FOR CHERRIES.—There

have been good prices paid for cherries this season. Of course, high prices are not unusual for the first cherries, but the luxury of the first fruits is being enjoyed by a great many since the competition to secure choicely packed fruit is evidently keen. On May 4 P. Ruhlman & Co. sold in the New York market for account of Pinkham & McKevitt seven boxes of Black Tartarians, raised on F. B. McKevitt's ranch, for \$7.25 per box—a shipment of eight boxes, one of which had been broken open and a large part of the contents taken—netting \$44.87. The same day six boxes grown on D. W. Harrier's ranch were sold at \$6.12 per box, netting \$30.37. Two boxes raised by McGugin Bros. sold at \$6.75, netting \$11.26.

SONOMA.

VALUABLE JERSEY CALVES.—A valuable shipment of thoroughbred Jersey heifer calves arrived from the East by express. It consisted of five calves and they came from Pennsylvania. Three were for Denman & McNear and two for W. D. Houx. The five are from prize winning Jersey stock and are the best that money can buy. The five cost between \$1300 and \$1400. The expressage alone amounted to \$300. The calves were crated similar to bicycles for shipment. A second shipment will be along later. The Denman & McNear portion were taken to the John Denman ranch.

CHERRY DISEASE.—Sebastopol Standard: From orchardists of Pleasant Hill we learn that a peculiar disease is attacking the fruit, particularly the black cherries. It is not in the early stages of the fruit, but after it has apparently well set and begins to ripen it turns black, rots and then falls off. This is not so much the case with the white cherries, although some indications of its appearance can be noticed.

TULARE.

FIRST CARLOAD OF NEW WHEAT.—Dinuba Advocate, May 18: The first carload of new wheat was shipped from Famosa on May 9th by O. B. and J. M. Kimberlin. They have been shipping the first wheat to market for years.

COST OF PUMPING WATER.—Tulare Register, May 18: The pumping plant at the Alexander orchard has settled down to satisfactory work and the result is cheap irrigating. Better than 40,000 gallons of water an hour is being raised, wetting about four acres each day of eleven hours, with a 4-inch pump. A crude-oil engine is being used of 16 actual H. P. It consumes twelve to sixteen gallons of oil a day. This oil has been bought in small quantities at 5 cents a gallon. Mr. Eckles, superintendent of the ranch, is well pleased with the plant, although he thinks there is power and water enough to entertain a pump a size larger. The well is on low ground, which necessitates considerable fluming to get water back to high land. It was designed at first to pump simultaneously from the artesian well and surface well but the latter was found sufficient. At this rate the expense of irrigating will not exceed 75 cents per acre.

YOLO.

EARLY FRUIT.—Winters Express, May 18: The first shipment of peaches from Winters was sent out the 15th by the Producers' Fruit Co. for W. H. Freeman. They were Alexanders. Apricot shipments became quite plentiful the first of the week, and on Monday J. A. de Vilbiss made a shipment of cherry plums. Fruit is ripening fast in the orchards, and the crop is generally good.

YUBA.

SHEEP ITEMS.—Four Corners, May 19: Some of our growers sold their wool this week at prices averaging 15½ cents. We understand the total returns on the sales will return the sheep men about \$10,000. Last week Mart Leahy of Sheridan purchased a band of 2500 lambs and ewes from Haile & Waltz of Chico. We understand he paid \$3.50. Sheep men are beginning to prepare to drive their sheep to mountain pasturage. By the end of the month all the large bands will be on the move.

Horse Owners! Use
GOMBAULT'S
Caustic Balsam
A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Taken the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular.
THE LAWRENCE-WILLIAMS CO., Cleveland O.



THE HOME CIRCLE.

The Weed's Complaint.

"It's rough,
I tell you what, and tough. Five times
I've taken root, this spring, an' tried to
grow.
But ev'ry time I git a start, along
That smarty comes a-brandishin' his
hoe—
An chop! An' there I am again. They
might,
I think, at least jest let a feller be,
Who wasn't doin' nothin', but they seem
To have a spite agin me, I can see,
An' I don't git no chance," said the weed.

"O' course,
If I was both'r'n' anybody—but I aint;
Ain't bonin' favors an' ain't makin' any
blow.
I'm peaceable an' quiet an' jest try
To git along the best I know;
I wasn't even planted, but jest grewed
All by my lonely—wasn't helped a speak,
As others are; but the less I ask,
It seems, the more I git it in the neck—
An' I don't git no chance," said the weed.

—Cleveland Leader.

Discontent.

The splendid discontent of God,
With chaos, made the world,
Set suns in place and filled all space
With stars that shone and whirled.

If apes had been content with tails,
No thing of higher shape
Had come to birth: the King of Earth
To-day would be an ape.

And from the discontent of man
The world's best progress springs;
Then feed the flame (from God it came)
Until you mount on wings.

—Ella Wheeler Wilcox.

Sergeant Davis' Comrade.

It was an especially bad piece of
Porto Rican road that lay just outside
the little pueblo of Manjano, and Lieut.
Wharton as his horse stumbled, turned
to the sergeant riding by his side. The
non-commissioned officer, however, was
staring ahead with a look of wonder-
ment in his eyes. The interpreter,
riding on a native pony, bobbed serenely
along. In another moment the lieuten-
ant, too, bent forward in his saddle
apparently listening.

Clear and pure a soprano voice was
leading the weaker ones of children in
a familiar air:

Long may our land be bright
With Freedom's holy light;
Protect us by thy might,
Great God, our King.

"Where is that coming from?" the
lieutenant ejaculated. Again the non-
commissioned officer made no reply,
but he urged his horse to a quicker
gait.

Like many Porto Ricau towns this
had one long street only, and half way
down its length the stars and stripes
were floating from a rude, one-story
building, whose tin roof and weather-
beaten walls glistened in the sun.
"There's a school in that shed," the
sergeant remarked. Reining their
horses before the open door they saw
the figure of a tall young woman whose
face was turned from them. The song
finished, the children were saluting the
flag draped upon one rough wall of the
room.

"I pledge allegiance to my flag and
the republic for which it stands, one
nation indivisible, with liberty and
justice for all." "We give our heads
and our hearts to God and our country,
one country, one language, one flag."
"Una patria, una idioma, una ban-
dera," the teacher repeated, and the
equestrians listened, as with hand
raised for silence she spoke to the chil-
dren in Spanish. "I want you to love
the flag as I do; to live for it and—to
die for it." Raising her flushed face
and wet eyes from the flag she turned
from the school toward the door, start-
ing with surprise at the unexpected
presence of the strangers. Parting the

little group of pupils that had clustered
about a gaudily colored chart she
stepped forward to greet them.

Officer and men had removed their
hats and their faces showed how the
act just witnessed had appealed to
them. The officer spoke, his admiring
eyes meeting those of the teacher.
"We have no excuse for the intrusion.
You must pardon any seeming rude-
ness, but it was such a surprise to see
you here. I was wholly unprepared to
find an English teacher, an American
girl—"

She had recovered her composure and
gave the lieutenant a frank smile.
"My name is Bramhall," she said, "and
I am, as you have guessed, an English
teacher."

"And I am Lieutenant Wharton."
"I do not know, Lieutenant Whar-
ton, whether you are aware of any
celestial radiance emanating from your
brow," she said, her eyes sparkling;
adding, before he could reply, "I've
been here two months now and you can-
not realize what a glimpse of an Ameri-
can means to me."

"Surely you are not alone among
these people?" he questioned.

"Yes, alone, but I have my friends.
I see you have the States' point of view
yet. Are you, but of course you are
transients?" She turned to speak
a silencing word to the pupils. "I am
here," he replied, "for the local elec-
tion. The presence of military author-
ity will be required for four days. Is
this the alcalde?" Following his eyes
she saw a man approaching with the
characteristic mannerisms of a Porto
Rican. It was the mayor. Civilities
exchanged through the interpreter, the
officer bade the teacher a temporary
farewell and followed the alcalde.

As he passed on she met the eyes of
the sergeant, and something held them
to his brown, strong face. It was a
face that carried her back to the hills
of New England. She had gained
enough information concerning military
etiquette to know why the non-com-
missioned officer had remained silent in
the presence of his superior, but never-
theless, it was his face that interested
her more.

The following morning Rita Bramhall
met the sergeant on her way to school.
She hesitated a moment, then stepped
toward him with outstretched hand.
"I do not require an introduction," she
said. "Any American possesses the
attraction of a magnet for me."

"Thank you, Miss Bramhall; my
name is Davis." The voice of the ser-
geant pleased the girl. It had a hearty
ring that seemed sincere and trust-
worthy. "It is great pleasure to find
you here," he continued. "But tell me,
how do you stand it?"

She had drawn her watch from her
belt and with a quick glance replaced
it. "I am due in 'escusela' now. If
you will come around to the place of my
abode to-night I will tell you."

That night she saw him coming up
the narrow street followed by a crowd
of curious natives, and when he joined
her upon the narrow balcony they soon
were entered into one of the many
long talks that occurred during the few
days he was there. It was wonderful
the strength of the bond formed by
the knowledge that they were the only
two Americans in the place. He spoke
of his first landing upon the island in the
summer of 1898, and she led him on to
speak of his part in war. She listened
breathlessly as he pointed southward
to where he had fired his first shot in
that afterward horribly mutilated regi-
ment, Alphonso XII, the pride and pet
of all the Spanish troops. "And they
were fine looking fellows," he said, "and
all the blue bloods of Spain." The tears
glistened in her eyes as he spoke of a
comrade who had fallen and his last
spoken words.

Davis broke the silence that followed.
"Just think of up home now." They
had discovered that they came from
adjoining States. "We wouldn't be
sitting around out doors in February.
I wouldn't mind a sleigh ride to-night.
How would it strike you?"

"It is positively unfeeling of you to
mention such a thing," she declared.

"Winter was always a great time for
little chaps on the farm. I remember
how little Stubby Morton and I used

to get up and haul out our sleds for a
slide on the crust before breakfast,
and how when father would catch us
he'd shout for us to come and feed the
calves. There was one little Jersey
heifer that was always upsetting the
bucket of milk."

"Sergeant Davis," she said suddenly,
"did you ever dig checkerberry leaves
from under the snow?" The man
laughed contentedly. The bond be-
tween them was strengthening. "I
have," he said.

She watched him curiously. "How
long have you been in the army?" she
questioned. "Three years next month.
I get my discharge then."

Another night they visited the high
walled cemetery, and returning walked
slowly down the narrow path. The
sun had just sunk behind a western
mountain and the sky above was painted
with marvelous color; yet so quickly did
it fade that, before they had reached
the house of Don Jose Hernandez, it
was nearly dark. As they seated them-
selves upon the narrow balcony, Miss
Bramhall became conscious of the in-
tensity of the gaze the sergeant had
fixed upon her and stirred uneasily. He
apologized quickly.

"I beg your pardon, but ever since I
first saw you I've been tormented with
a desire to recall whom you make me
think of, and I can't get the least cue."
She laughed. "Perhaps we've met in
some other world, who knows. 'In
the gloaming, O my darling,' she
hummed softly.

A sudden light came to his face. "I
remember," he said slowly.

"Yes? Tell me. I am curious."

"It was over there," he pointed west-
ward, "near Las Marias, where we
had a skirmish with the Spaniards. I
got changed into another company, and
I fell in with a fellow that was a dif-
ferent sort from the rest. I took to him
from the first. Some way he never got
down to little tricks and—he never
drank. He had a grand voice and I re-
member his singing the song you just
hummed, and I guess there are a lot of
fellows in the company who will never
forget one Sunday night when he sang
hymns."

"He had the most perfect control of
himself, too, in spite of a devilish tem-
per," he went on with admiring recol-
lection. "I never saw him lose it but
once, and that was when one of the
men got beastly drunk and went round
showing the fellows his wife's picture.
One of the boys called him 'deacon'
once when he refused drinks. The
name would have stuck to anybody
else, but it didn't to him. Seemed as
if somehow it was way down beneath
his notice, and the contemptuous way
he looked at the fellow just shrivelled
him up."

"And I remind you of him; he looked
like me?" Miss Bramhall interrupted.
Davis did not notice the question; he
was deep in his narrative.

"When we fellows would get to talk-
ing about our homes and all that sort
of thing, he'd sit and listen, but never
a word did we ever hear from him
about his folks. He came the nearest
to what I'd like to be of any man I
ever saw. He was absolutely fearless
and always ready to do a fellow a good
turn, though he never came down to
their level and—I tell you, he loved the
old flag."

Again Davis paused; his listener sat
in silence. "It was near the beginning
that he went down," he went on, more
slowly. "We didn't any of us realize,
at least I didn't, what was before us
till the firing commenced. Roberts
was perfectly cool and turned to me
with a smile on his face when we first
heard the bullets. Everything is mixed
in my mind until I saw him fall back-
ward, and as I bent over him he said,
just as calmly as I ever heard him
speak: 'Be sure and tell them, Davis,
that when I was sure of myself, I
should have gone back to them.' He
started then as if with pain and lost
consciousness and—that's all. He was
shot through the breast, and among
the papers we found there was no
name or address—nothing; we never
knew anything more about the best
man Co. B ever knew."

Rita drew in her breath with a quick
sob and her eyes were glistening with

tears. She did not notice that Davis
was apparently searching in his pock-
ets. "He loaned me this just before
the fight and I've always kept it." He
held out something that gleamed in the
moonlight.

The girl took it indifferently. She had
been deeply touched with the narra-
tive. Suddenly a tremor shook her en-
tire frame; in the moonlight her face
seemed ghastly. "Tell me," she cried
out, "his name." Her voice sounded
strangely.

"Graham Roberts, but why?" Davis
had become infected by her excite-
ment. She had buried her face in her
hands and the gleam of the silver
shone between her fingers. It seemed
hours to Davis before she again lifted
her face. It bore the same expression
he had often seen upon that of his fallen
comrade and told of a mental struggle
for control, fought—and won.

"I gave my brother this knife four
years ago on Christmas day." Her
voice was hoarse with emotion. "For
three years we have supposed him
dead—that he died by his own hand."
She drew in her breath and again she
trembled, but she soon continued with
the same calm strength Davis so well
remembered in the soldier. "The cir-
cumstances that led up to his separa-
tion from his family I cannot now speak
of even to you—who saw him die. His
love of music was his strongest charac-
teristic. You know how he could put his
soul into his voice, but you do not know
what a careful training he had received
or what we hoped for him. Then in all
the brightness of his career, one of the
lightning strokes of fate fell upon him,
and he became possessed with an insane
recklessness and—and went away from
us with the declaration that his life
was hopelessly ruined. He went west—
to the far, far west—and we heard from
others of the life he was leading, and at
last that he had ended it by sailing out
into San Francisco bay in one of the
worst gales that ever swept the shores
of California. But I know now that
whatever else he may have been I
never believed that he was a coward."

The sergeant had listened with bowed
head. He was living over again the
brief weeks he had known Graham
Roberts. "I cannot doubt now when
I see this knife, when you speak of our
facial resemblance, that he died as his
father did—in '63, for his country's
flag."

Davis spoke no word, but he caught
the railing of the balcony with his hand
and grasped it so tightly that the veins
in his strong wrist seemed bursting
through the brown skin.

"Yes," she said slowly, "I know it
was Graham—Graham Roberts Bram-
hall—thank God that I should know at
last that he was himself again, and that
had he been spared he would have
come back to us."

Sergeant Davis rose to his feet. The
life of a soldier is not such as to en-
courage a display of emotion. Again
the snatches of weird song came from
the peon cabin. At last he spoke: "I
remember his saying once that a man
having once realized that every occur-
rence in real life is a part of a per-
fectly ordered universal plan, he be-
lieved every man who failed to credit
it, a fool. I shall always find pleasure
in thinking, Miss Bramhall, that,
strange as our meeting may seem, it
was not a chance contact, a mere hap-
pening, but a part of that plan in
which your brother had such perfect
faith." He paused and her eyes were
raised to his. "I never can be suffi-
ciently thankful for having met the sis-
ter of the man I so greatly admired,
or for the privilege of telling her of the
influence he exerted throughout the en-
tire company."

He left her then, but in the years
that were to come both realized that
neither would forget that night. When
the voluble lieutenant returned and
carried away with him all traces of
military authority he was greatly sur-
prised to chance to witness a parting
between Sergeant Davis and the En-
glish teacher at Manjano. Miss Bram-
hall handed the soldier a silver hand-
led knife and in a low voice whose in-
tensity the lieutenant failed to under-
stand said: "You keep it, for his sake
—and mine."—Florida Agriculturist.

Taking Cold.

About 1,250,000 people die annually in the United States, and a large portion of this vast throng die from diseases that start up or have their foundation laid in taking cold. Several hundred thousands fall victims to pulmonary tuberculosis, bronchitis, pneumonia and laryngitis, and these diseases are very often inaugurated with fits of sneezing and coughing. Then neuralgia, rheumatism, and many other ills have a similar origin. Hundreds of thousands of cold-takers live to the middle or old age, but are permanently afflicted with conditions that render them chronic invalids. There can be no more pertinent question pertaining to health than the subject of taking cold, states Dr. John McCoy of Los Angeles. But few people, comparatively, are exempt, and yet the preventive methods usually adopted are calculated to increase the danger in this respect.

The American people wear too much clothing; the body is swathed in thick, heavy garments that render the skin tender and sensitive, and then the least exposure starts up fits of sneezing which are, perhaps, followed with hoarseness and coughing spells; more clothing is added, and this increases the danger; a heavy overcoat is brought into requisition instead of a pair of warm overshoes; a little extra exposure precipitates a chill, and an alarming illness follows.

Poor ventilation is a habit that is full of peril, and that renders one liable to attacks of cold at the least exposure. The windows are closed for fear of "night air;" the morning brings feelings of dullness, perhaps headache, and the least exposure starts up a cold, and, by and by, if nothing more serious occurs, a catarrhal condition is established that resists all ordinary remedies. Such people are heard to say: "I take cold so easily." And no wonder.

What should we do? Clean bathing cloths should be kept at every wash stand, and they should be used, with cold water, over the entire body, every morning, or at least over the arms, chest and throat. If this cannot be done a fairly good substitute may be found in an open-air friction bath with hair mittens morning and evening. This bath can be taken in a thoroughly ventilated room in real cold weather. The feet should be often bathed in cold water, followed with a good rub with a rough towel. The amount of clothing often ought to be reduced. Throw away that heavy overcoat, and in its place put on a pair of arctic overshoes, ventilate your hat by punching plenty of holes in it, and live in the open air. Open your sleeping-room windows and admit all the air possible. No danger of taking cold from breathing fresh air, night air, even, while one who sleeps with poor ventilation is sure to take cold easily, and any amount of other ills are liable to follow breathing bad air.

If you are sneezing and blowing almost daily and fear serious results, just stop and think a moment.

Throw away most of those bottles of medicine, get a half-dozen bathing cloths, a few rough towels and a pair of hair mittens; take a cold-cloth bath in the morning and an open-air friction bath, with hair mittens, every evening just before retiring for the night. Throw away your heavy overcoat and put on better and warmer footwear, then thoroughly ventilate your rooms, your business place and your sleeping apartments, and the chances are that you will break the habit of taking cold in three months. And the chances are, too, that you will add years and much comfort to your life.

We should snap our thumbs and laugh at the Fates.

For idle, our time we mustn't. Though everything comes to him that waits, Still more comes to him that doesn't.

MISS JONES: "It seems to me that all the nicest men are married." Mrs. Brown: "Well, dear, they weren't always so nice, you know; they've only been caught early and tamed."

Footwear Nevers.

Never wear a shoe that will not allow the great toe to lie in a straight line.

Never wear a shoe with a sole narrower than the outline of the foot traced with a pencil close under the rounding edge.

Never wear a shoe that pinches the heel.

Never wear a boot so large in the heel that the foot is not kept in place.

Never wear a shoe or boot tight anywhere.

Never wear a shoe or boot that has depressions in any part of the sole to drop any joint or bearing below the level plane.

Never wear a shoe with the sole turning up very much at the toes, as this causes the cords on the upper part of the foot to contract.

Never wear a shoe that presses up into the hollow of the foot.

Never have the toe of the boots tight as it interferes with the action of the calf muscles, makes one walk badly and spoils the shape of the ankle.

Never come from high heels to low heels at one jump.

Never wear one pair of shoes all the time unless obliged to do so. Two pairs of boots worn a day at a time alternately give more service and are much more healthful.

Never wear leather sole linings to stand upon; white cotton drilling or linen is much better and more healthful.

Never wear a short stocking, or one which after being washed is not, at least one-half inch longer than the foot. Bear in mind that stockings shrink; be sure that they will allow your toes to spread out at the extreme ends, as this keeps the joints in place and makes a strong and attractive foot. As to shape of stockings the single digital or "one-toe stocking" is the best.

Never think that the feet will grow large from wearing proper shoes; pinching and distorting makes them grow not only large but unsightly. A proper natural use of all the muscles makes them compact and attractive.—Health Culture.

Bruises.

When the little one falls and sustains a bruise, some old-fashioned remedies are about as good as anything that can be suggested by the physician or surgeon, says Dr. Julia Holmes Smith. When soft, muscular tissue comes in contact with a hard substance there is a rupture of tiny blood vessels, and the blood oozes out in the surrounding tissues, and the result is black, green and blue discolorations which we associate with bruises. Nature immediately commences to restore all these vessels, and really no external application is of any good except to protect the part and allow Dame Nature to do her work. This is true of any wound, and the idea that such and such a thing is a healing substance is really a mistake; but naturally one is eager to do something for the sufferer, and our grandmothers were not far wrong when upon a bruise they bound a bit of fresh beefsteak, or brown paper soaked in vinegar, or bit of cotton saturated with diluted arnica. The swelling goes down, and there is relief to pain, and Dame Nature is helped in her work. The pressure of such an application promotes the re-absorption of the blood, and some of these applications effect a deadening of sensation to the wound.

You can toast bread over a kerosene stove by putting the bread in a small sheet iron spider over the stove. If the pan is cold the toast will be crisp all through. If you prefer it simply browned on the outside, heat the pan and then put in the bread. It is convenient to know this in summer.

A NOVELTY in skirt finishing, where the material used is cloth of some pastel shade, is to ornament the box pleat by rows of machine stitching in silk of a darker color than that of the cloth. Self-colored stitching would not be apt to

show very well. The same scheme of ornamental rows of machine stitching is applied to the heavy folds of cloth which nearly meet in the inverted back. Finish the rows by arrowhead points where the fullness is released from the folds.

DOMESTIC ECONOMY.

A New Way to Mix Cake.

Miss Mary Kimmerly, writing in "What to Eat," decries the old system of mixing the ingredients of a cake, i. e., creaming the butter and sugar together, beating the yolks and whites separately, and then baking slowly. Young America declares this to be a waste of time, and says: I have had just as good results when less than one-half the time was used. First, make such a fire as will heat the oven quickly; every cook understands the kind of fire her particular range requires. Now put all your materials together into your mixing bowl before you begin beating or stirring at all; butter, eggs, sugar, milk, baking powder, flavoring and flour, then begin stirring, and continue steadily until the whole is a smooth batter; butter your baking pans, and put in the batter and bake as quickly as possible without scorching. If you are sceptical about the method, just try a couple of simple recipes at first and see how much less time and trouble is required to do the work, and the result is quite as satisfactory. I have never tried making angel food in this way, but believe it can be done just as well as other kinds of sponge cake, and I know by my own experience that excellent sponge cake can be made in this way.

Try some plain cookies that the children or even dyspeptics can eat with no bad results. One cup of sugar, one-half cup sweet milk, one egg, one teaspoon baking powder, flavor to suit the taste, add two cups of flour, put all together in the mixing bowl and stir until all is a smooth mass, then add enough more flour to roll out easily, and bake in quick oven.

White Cake.—Whites of four eggs, one cup of sugar, one-half cup of sweet milk, one-half cup of butter, one-half cup of corn starch, one and one-half cups of flour, two teaspoonfuls of baking powder, flavor to suit taste; put all ingredients together and stir briskly until it is a smooth batter, and bake in a quick oven.

Plain Sponge Cake.—Three eggs, one cup of sugar, three tablespoonfuls of sweet milk, one cup of flour, one teaspoonful of baking powder; flavor, and and bake in loaf, or sheet and spread with jelly, and roll. In cool weather the butter should be softened, as it mixes more readily, and the quicker a cake is ready for the oven the better the result, provided, however, the oven is properly heated.

Hints to Housekeepers.

A CUPFUL of maple sugar grated or cut in bits stirred into an ordinary quick biscuit dough will give a novel sweet cake. The biscuits are then cut as usual and baked quickly; the sugar melts during the cooking and glazes the outside.

The old-fashioned wire spoon egg-beater gives a greater bulk to the whites of eggs than any other form of beater, and a greater bulk gives more lightness to cake. A pinch of salt whitens the whites; chilling them makes them beat up more quickly. Use the folding motion in adding the whites to the cake batter; you thus incorporate more air and this aids lightness.

MACARONI is one of our most nutritious and economical foods, and it is to be regretted that it is not seen upon our tables at least once a week. It might share the honors with the potato as a daily accompaniment to our meats. Although of the same nature as our daily bread the methods of cooking it are so different from those we use in cooking wheat flour, that we seem to have an entirely new or different dish. Maca-

roni is also valuable because it affords an opportunity to use cheese, another valuable food, in a form which to many persons is more digestible than when eaten alone or uncooked.

It is the little things that make up the sum total of a woman's existence—and it is the knowing how to do the many little tasks of the household in an easy manner, that greatly lightens the labor. So many dislike to sprinkle clothes, but if they will keep a small whisk broom especially for this purpose sprinkling clothes will not be such a formidable task. Dip the broom into a bowl of water and lightly shake the water over the garments. You will find the moisture will be more evenly applied without the disagreeable necessity of dipping the fingers into the water. Then when the broom becomes soiled it may be quickly cleansed in suds and if rinsed in scalding water the splints will become toughened, thereby prolonging its usefulness.

THE changeable spring weather is very trying to every one and especially to those susceptible to colds. This is the season when pneumonia is so apt to follow a neglected cold and upon the first symptoms something should be done. A remedy which we have heard spoken very highly of is as follows: Take six to ten onions, according to size, and chop fine, put in a large spider over a hot fire, then add about the same quantity of rye meal and vinegar enough to make a thick paste. Stir it thoroughly, letting it simmer five or ten minutes. Put in a cotton bag large enough to cover the lungs and apply it to the chest as hot as the patient can bear. When it gets cool apply another, and continue reheating the poultices. Usually three or four applications will be sufficient and the patient will be out of danger in a few hours. This is certainly simple enough to at least warrant a trial.

Domestic Hints.

CUP EGG ON TOAST.—Butter six small cups and dust them with bread crumbs, put into each one raw egg and a sprinkle of salt; set the cup in a pan of hot water on the stove, cook until the whites are firm. Have ready six round pieces of buttered toast laid on a hot dish, put onto each piece one egg, and garnish with watercress or parsley.

CHEESE OMELET.—Prepare an omelet the same as in foregoing recipe, sprinkle over half a cupful grated cheese, fold it double and slip it onto a dish, sprinkle grated cheese over the top and set the dish for a few minutes in a hot oven or under a gas broiler till the cheese is partly melted; remove and serve at once.

EGG IN CASSEROLE.—For this take either small earthen saucepans or small cups, butter the little saucepans and put one egg into each one, sprinkle over a pinch of salt, one tablespoonful grated cheese, one tablespoonful white breadcrumbs and a few drops of melted butter. Set the saucepans in a shallow tin pan, place in oven and bake to a pale brown color; remove and serve in the saucepans.

PUFF OMELET.—Have two small stone bowls, put the yolks of three in one and the three whites in the second bowl, add three tablespoonfuls cold water to the yolks and one-quarter teaspoonful salt, stir two minutes, beat the whites to a stiff froth, then add slowly the yolk mixture to the whites while beating constantly; place a medium-sized frying pan with one tablespoonful butter over the fire, when melted pour in the egg mixture; do not stir, but when the eggs begin to set, slip a broad-bladed knife under the omelet to keep it from burning and shake the pan to and fro. When light brown on the under side, place the pan for a few minutes into a hot oven, touch it lightly with the fingers; if nothing adheres to it, it is ready to remove. Hold the pan in the left hand and a palette knife in the right, slip the omelet onto a warm dish and at the same time fold it double. Care should be taken not to leave the omelet too long in the oven, as too much cooking is apt to make it tough.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, May 23, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	65 1/4 @ 65 1/2	66 1/4 @ 67
Thursday.....	65 1/4 @ 65 1/2	66 1/4 @ 66 3/4
Friday.....	64 1/4 @ 65	66 @ 67 1/4
Saturday.....	66 @ 65 1/2	67 1/4 @ 67
Monday.....	66 1/4 @ 65 1/2	67 1/4 @ 66 1/2
Tuesday.....	65 1/4 @ 65 1/2	67 @ 66 1/2

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	May.	July.
Wednesday.....	5s 8 1/4 d	5s 8 d
Thursday.....	5s 8 1/4 d	5s 8 1/4 d
Friday.....	5s 8 d	5s 7 1/4 d
Saturday.....	5s 8 d	5s 7 1/4 d
Monday.....	5s 8 1/4 d	5s 8 1/4 d
Tuesday.....	5s 8 1/4 d	5s 8 d

*Holiday.

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	— @ —	99 1/4 @ 99
Friday.....	— @ —	99 1/4 @ 99 1/2
Saturday.....	— @ —	99 1/4 @ 99 1/2
Monday.....	— @ —	99 1/4 @ 99 1/2
Tuesday.....	— @ —	99 1/4 @ 99 1/2
Wednesday.....	— @ —	99 1/4 @ 100

WHEAT.

Although the outward movement of wheat from this port has lately been on the increase, including the equivalent of two cargoes, or about 6500 tons to Chile and Peru, also 500 tons per cent steamor to Japan, the latter being even more unusual than the shipments to South America, the market remains in unsatisfactory condition for the selling and producing interests. Reports were not lacking from Chicago about drouth in some wheat sections of the East, too much rain in other parts, and damage from Hessian fly in still different localities, but there was no particular firmness developed in consequence of these rumors. With the season just opening, considerable old wheat still on hand, and the belief generally entertained that the world's crop will be of more than sufficient proportions for prospective requirements, something out of the ordinary at present would be necessary to develop any noteworthy strength in wheat. Later on, should any considerable portion of the crop get into second hands, efforts would doubtless follow to create a temporary boom, and if no substantial reasons presented, manufactured ones would be made to do service. The visible supply east of the Rockies decreased last week 1,358,000 bushels.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, — @ — c.
December, 1900, delivery, 99c @ \$1.00.
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at — @ — c; December, 1900, 99 1/2 c @ 1.00.

California Milling.....	95 @ 97 1/2
Cal. No. 1 shipping, alongside.....	90 @ 92 1/2
Oregon Valley.....	90 @ 95
Walla Walla Blue Stem.....	95 @ 97 1/2
Walla Walla Club.....	85 @ 95
Of qualities wheat.....	82 1/4 @ 87 1/4

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	6s3d @ 6s5d	6s1 1/4 d @ 6s2d
Freight rates.....	25 1/2 @ 26 1/2 s	38 1/2 @ 40 s
Local market.....	\$1 06 1/4 @ 1 08 1/4	90 @ 93 1/2 c

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

In the matter of values there are no quotable changes to note, but the market cannot be termed firm. Slightly lower figures than lately current are among the probabilities of the near future. An encouraging feature is the recent heavy shipments being made to the Orient from this and Northern ports. Two steamers departing from here the past week took 21,250 barrels for Asia.

Superfine, lower grades.....	\$2 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

Market shows weakness, anticipated liberal receipts of new barley at an early day causing buyers to hold back as much as possible. Small quantities of new crop

barley have been already received and have sold at much the same figures as current on old, but most buyers are giving old the preference, quality and price being the same, and will likely continue to do so for at least a few weeks to come.

Feed, No. 1 to choice.....	70 @ 72 1/2
Feed, fair to good.....	67 1/2 @ 70
Brewing, No. 1 to choice.....	75 @ 85
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

Quotable values have not materially changed, but the market has been easier in tone than for several weeks preceding, with offerings showing some increase and the demand hardly so good as it had been. The increased supplies were mainly from Washington. As has been the case much of the season, values on Blacks and Reds were better sustained than on Whites and Grays.

White Oats, fancy feed.....	1 23 1/4 @ 1 25
White, good to choice.....	1 12 1/4 @ 1 20
White, poor to fair.....	1 05 @ 1 10
Gray, common to choice.....	1 02 1/4 @ 1 12 1/2
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	95 @ 1 07 1/2
Red.....	95 @ 1 17 1/2

CORN.

While the market is a little better supplied with Large Yellow than for some time past, mainly Eastern product, there is no weakness observable and no forcing of stocks to sale. Large White is in fair supply and in light request, causing this variety to incline against sellers. Small Yellow continues to be offered sparingly.

Large White, good to choice.....	1 05 @ 1 07 1/2
Large Yellow.....	1 15 @ 1 17 1/2
Small Yellow.....	1 40 @ 1 50
Eastern, in bulk (carload lots).....	1 10 @ 1 12 1/2

RYE.

There is a moderate amount of trading at generally unchanged rates, market presenting a fairly steady tone.

Good to choice, new..... 95 @ 1 00

BUCKWHEAT.

With stocks light and no inquiry, the demand never being of consequence in the summer months, values for the present are wholly nominal.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

Wholesale trading is of a very light order, largely due to absence of noteworthy offerings from first hands or of large lots from second hands. Market shows steadiness, values for most descriptions being without quotable change. In a jobbing way, trade is of fair average proportions for this time of year, all varieties in stock receiving more or less attention. Pinks and Bayos appear to be in better request than for some time previous.

Pea, fair to good, 100 lbs.....	3 35 @ 3 50
Small White, good to choice.....	3 35 @ 3 50
Lady Washington.....	3 15 @ 3 25
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 70 @ 2 90
Bayos, good to choice.....	3 15 @ 3 35
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 25 @ 5 35
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

Advices by recent mail from New York give the following review of the bean market, prices quoted being per 60-lb. bushel:

Business does not improve much and the week has brought further slight shrinkage in values for most kinds. Domestic receipts have run very light, but there is still an accumulation of stock at the receiving depots, and upward of 25,000 bags of foreign beans are still in first hands unsold, beside the cargoes now afloat, which are estimated at 10,000 to 12,000 bags. This is not a large supply, but the summer season is coming on and most holders are seeking outlets for the stock. Marrow settled to \$2.12 1/2 early in the week, and have since ruled about steady, with some jobbing trade, but very little interest on the part of exporters. A few lots of very choice Medium are still held at \$2.15, but most of the best goods can be bought at \$2.12 1/2. The small available supply of Pea has kept the market for such firm, and both bags and barrels have sold at \$2.25. Sales of Red Kidney were a little irregular, exporters filling their orders at \$2.01 1/2 @ 2.05 f. o. b.; there is still some pressure to sell and an easy feeling, with choice lots offering at \$2.02 1/2. Only a few small sales of White Kidney. Yellow Eye dull and weak. Turtle Soup greatly neglected and the market is nominally lower. Lima quiet but held about steady at \$3.52 1/2 @ 3.55. Imported Giants pretty well cleaned up. Foreign beans have at times shown some steadiness, but the movement is only fair and feeling at the close rather easy, except for choicest quality; fair to prime Medium sell at \$1.70 @

1.85, with fancy Italian going mainly at \$1.95. Most of the Pea sell at \$1.90 @ 2.00; if fancy, they would bring more. Green peas have dragged at easier prices. Scotch clean up better and show momentary firmness.

DRIED PEAS.

Offerings and demand are both insignificant, as is to be expected at this date. Values are nominally as before.

Green Peas, California.....	2 20 @ 2 35
Niles Peas.....	2 00 @ 2 25

WOOL.

There is no activity to report, but dealers are paying more attention to offerings, and occasional transfers are being effected within range of quotations below noted, mainly of choice Northern wools. Eastern and foreign markets show an improved tone. A fair outward movement from this center is looked for in the near future.

SPRING.

Humboldt and Mendocino.....	19 @ 21
Northern, free.....	16 @ 17
Northern, defective.....	13 @ 15
Middle Counties, free.....	15 @ 17
Middle Counties, defective.....	13 @ 15
Southern Mountain, 12 mos.....	11 @ 13
Southern Mountain, free, 7 mos.....	12 @ 15
Southern Mountain, defective, 7 mos.....	10 @ 12
Oregon Valley, fine.....	20 @ 21
Oregon Valley, medium and coarse.....	19 @ 20
Eastern Oregon, choice.....	17 @ 18
Eastern Oregon, fair to good.....	12 @ 16
Nevada, as to condition.....	15 @ 17

HOPS.

Market presents no new or especially noteworthy features, as regards condition or values. Demand is slow and is mostly of a light order, present transfers being almost entirely from jobbers. There are reports of the yards in some of the prominent hop districts in this State not being in very promising condition. With reduced acreage in Oregon and Washington, and probably East, the coming crop may meet with an improved market, but whether it does so or not will depend much upon conditions in Europe.

Good to choice, 1899 crop..... 6 @ 9

The following concerning the hop market is furnished through mail of recent date by a New York authority:

The situation of the local market has not changed to an appreciable extent. Dealers have made some inquiries from day to day, and a few sales have resulted. As a rule, however, they have not been willing to pay the prices asked for such grades as were wanted. Holders have refused to show any favors, evidently appreciating the fact that nowhere can stock be bought and landed here at any less cost. Purchases by brewers have continued on a restricted scale, the cool weather holding in check the demand that was expected to materialize soon. Arrivals were much lighter up to Thursday, when the steamer El Norte brought in 562 bales of Pacific. Indications point to a steady shrinkage in receipts, and it is not expected that local holdings will become any larger than at present. Values throughout are about steady. The few lots of choice quality, either State or Pacific coast, when wanted bring 12 1/2 @ 13c, but most of the offerings can be had within range of 8 @ 11 1/2 c. Crop reports from New York State are quite as conflicting as usual at this season of year. More or less complaint is heard of winter killing and missing hills, especially in the northern counties; but it is too early to tell much about it. The general impression here is that the yards, as a whole, are in pretty good shape. Farmers are very busy grubbing and setting poles. London mail advices indicate better business and firmer market.

HAY AND STRAW.

Old hay is in moderately good request at fairly steady rates, quotations continuing practically as last noted. There are no heavy arrivals of Old, especially of choice to select, and some sales of high grade Wheat are effected at slightly higher figures than are warranted as a regular quotation. Some New hay, mostly volunteer Oat, is coming forward, but is meeting with a discouraging market, dragging badly at \$5 @ 6 per ton. A carload of fairly good new Wheat hay sold Tuesday at \$7. Straw is in slow request and market favors buyers.

Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 00 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 00 @ 7 00
Stock.....	5 00 @ 6 00
Compressed.....	6 50 @ 9 50
Straw, 1/2 bale.....	25 @ 37 1/2

MILLSTUFFS.

There were no heavy stocks of Bran, neither was demand brisk, and prices remained about as last quoted. Middlings and Shorts continued quotably as last noted, with supplies and demand both of a limited character. Tendency on Rolled Barley was in favor of buyers. Milled Corn ruled steady.

Bran, 1/2 ton.....	12 00 @ 13 00
Middlings.....	15 00 @ 18 00
Shorts, Oregon.....	13 00 @ 15 00
Barley, Rolled.....	15 50 @ 16 00
Corameal.....	23 50 @ 24 00
Cracked Corn.....	21 50 @ 25 00

SEEDS.

The last Panama steamer took 43,154 pounds Mustard Seed for New York, the purchase having been made some time ago. Present spot supplies are light of seeds of all descriptions. Market showed in the main a good tone. Owing to the inactivity, values for the time being are largely nominal.

	Per ctt.
Mustard, Trieste.....	3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25
	Per lb.
Canary.....	3 1/4 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	— @ —

BAGS AND BAGGING.

Orders are beginning to come forward from the interior for Grain Bags, but there is no special activity. Market is steady at the rates quoted. In other Bags and Bagging there is little doing and no changes to record in quotable values.

Calcutta Grain Bags, huyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 1/4 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ 6 1/2
State Prison Bags, 1/2 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/4
Fruit Sacks, cotton.....	6 1/4 @ 7 1/4

HIDES, PELTS AND TALLOW.

The entire line is quiet and tendency is to a lower range of values, but changes the current week in quotable rates have not been numerous nor marked. Figures quoted, however, should be regarded as the extreme of the market at this date.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 @ 9	
Medium Steers, 48 to 56 lbs.....	9 @ 8	
Light Steers, under 48 lbs.....	9 @ 8	
Heavy Cow Hides, over 50 lbs.....	9 @ 8	
Light Cow Hides, under 50 lbs.....	9 @ 8	
Wet Salted Kip.....	9 @ 8	
Wet Salted Veal.....	9 @ 8	
Wet Salted Calf.....	10 @ 9	
Dry Hides.....	18 @ 15	
Dry Kip and Veal, 11 to 16 lbs.....	17 @ 13	
Dry Calf, under 4 lbs.....	20 @ 16	
Salted Horse Hides, large.....	2 50 @ —	
Salted Horse Hides, medium.....	2 00 @ —	
Salted Horse Hides, small.....	1 00 @ —	
Dry Horse Hides, large.....	2 00 @ —	
Dry Horse Hides, small.....	75 @ 100	
Dry Colts' Hides.....	50 @ 75	
Pelts, long wool, 1/2 skin.....	1 00 @ 1 25	
Pelts, medium, 1/2 skin.....	70 @ 90	
Pelts, short wool, 1/2 skin.....	35 @ 60	
Pelts, shealing, 1/2 skin.....	20 @ 35	
Deer Skins, best summer.....	27 1/2 @ 30	
Deer Skins, good medium.....	20 @ 22 1/2	
Deer Skins, thin winter.....	— @ 10	
Elk Hides.....	10 @ 12	
Tallow, good quality.....	5 @ 5 1/4	
Tallow, No. 2.....	4 1/4 @ 4 1/2	
Goat Skins, perfect.....	30 @ 37 1/2	
Goat Skins, damaged.....	10 @ 20	
Kid Skins.....	5 @ 10	

HONEY.

Supplies in this center continue light. Stocks of Old are about exhausted and very little New Crop has yet come forward. Owing to the absence of any noteworthy business, wholesale values for the time being are not clearly defined. The market for desirable qualities, however, presents a firm tone.

Extracted, White Liquid.....	7 @ 7 1/2
Extracted, Light Amber.....	6 1/2 @ 7
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	11 1/2 @ 12 1/2
Amber Comb.....	8 @ 10

BEESWAX.

Market is not burdened with offerings, nor is it likely to be the current season. There is no lack of demand and values are being well sustained.

Good to choice, light, 1/2 lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Beef has sold at about same figures as last quoted, although market was not firm. Mutton inclined in favor of consumers without being appreciably lower. Veal was in light receipt and met with a firm market. Values for Lamb were fairly steady. Hog market showed weakness, not many being required at full current rates.

Beef, first quality, dressed, net 1/2 lb.....	6 @ 6 1/4
Beef, second quality.....	6 @ —
Beef, third quality.....	5 @ 5 1/2
Mutton—ewes, 6 @ 70; wethers.....	6 @ 7 1/2
Hogs, hard grain fed, medium.....	5 1/2 @ 5 1/4
Hogs, small, fat.....	5 1/2 @ 5 1/4

Hogs, large, hard.....	5% @ 5 1/2
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ 5 1/4
Hogs, country dressed.....	6 @ 6 1/4
Veal, small, # lb.....	8 @ 10
Veal, large, # lb.....	7 @ 8 1/2
Lamb, spring, # lb.....	8 @ 8 1/2

POULTRY.

A soft and generally unsatisfactory market has been experienced for nearly all descriptions of poultry the past week, owing largely to a glut of Eastern stock. Much of the imported poultry was sold at a loss, and some think the market was surfeited intentionally by one heavy handler who is trying to establish a monopoly of the import poultry trade in this center.

Turkeys, dressed, # lb.....	— @ —
Turkeys, live hens, # lb.....	12 @ 13
Turkeys, live gobblers, # lb.....	11 @ 12
Hens, California, # dozen.....	4 00 @ 5 00
Roosters, old.....	3 50 @ 4 00
Roosters, young (full-grown).....	5 00 @ 6 00
Fryers.....	3 50 @ 4 00
Broilers, large.....	3 00 @ 3 50
Broilers, small.....	1 75 @ 2 50
Ducks, old, # dozen.....	4 50 @ 5 00
Ducks, young, # dozen.....	5 50 @ 6 00
Geese, # pair.....	1 25 @ 1 50
Goslings, # pair.....	1 25 @ 1 50
Pigeons, old, # dozen.....	1 50 @ 1 75
Pigeons, young.....	1 50 @ 1 75

BUTTER.

There are quite free receipts from northern California and southern Oregon, with demand hardly so active as it was a few weeks ago, especially on packing account. The market was fairly steady for strictly choice to select, but on defective qualities marked concessions to buyers were of frequent occurrence.

Creamery, extras, # lb.....	18 @ —
Creamery, firsts.....	17 1/2 @ —
Creamery, seconds.....	17 @ —
Dairy, select.....	17 @ —
Dairy, seconds.....	16 @ 16 1/2
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 15
Creamery in tubs.....	18 @ 19
Pickled Roll.....	— @ —
Firkin, California, choice to select.....	18 @ 19
Firkin, common to fair.....	16 @ 17

CHEESE.

Young Americas or small cheese are in much more limited supply than the regular size flats, but stocks of the latter are not accumulating to any noteworthy degree. Market is firm at the quotations, with prospects of choice being still less in buyers' favor at an early day.

California, fancy flat, new.....	8 1/2 @ —
California, good to choice.....	8 @ 8 1/2
California, fair to good.....	7 1/2 @ 8
California Cheddar.....	— @ —
California, "Young Americas".....	8 1/2 @ 9

EGGS.

This market has not changed to any great degree since last review, either in general tone or in quotable rates. With the summer season now on, and seasonable fruits and vegetables abundant, consumers are not running heavily on eggs. Demand will likely prove slow for about two months to come, but in the meantime the production will be on the decrease. While the market is not likely to stiffen materially under a slow inquiry, strictly choice eggs are more apt to incline against than in favor of buyers from this time forward.

California, select, large, white and fresh.....	16 @ —
California, select, irregular color & size.....	14 1/2 @ 15 1/2
California, good to choice store.....	13 @ 14
Eastern, as to section and grading.....	15 @ 16
Eastern, cold storage.....	— @ —

VEGETABLES.

With arrivals on the increase of most of the varieties of vegetables now in season, the general tendency was to lower values, although prices for some kinds, notably Tomatoes, Cucumbers, Peppers and Garlic, continued to be maintained at a tolerably high range. Onions brought fairly steady prices. Green Corn arrived in small quantity and, considering the quality, brought good figures.

Asparagus, # box.....	50 @ 1 25
Beans, String, # lb.....	3 1/2 @ 4 1/2
Beans, Wax, # lb.....	4 @ 4 1/2
Cabbage, choice garden, # 100.....	40 @ —
Cauliflower, # dozen.....	50 @ —
Cucumbers, # box.....	1 50 @ 2 00
Egg Plant, # lb.....	7 @ 10
Garlic, # lb.....	4 @ 6
Green Corn, # doz.....	12 1/2 @ 20
Onions, Red, Cal., good to choice.....	75 @ 1 00
Onions, Oregon, # cental.....	— @ —
Peas, Sweet, garden, # lb.....	2 1/2 @ 3
Peas, Green, # sack.....	75 @ 1 25
Peppers, Green Chile, # lb.....	6 @ 8
Peppers, Bell, # lb.....	10 @ 12
Rhubarb, # box.....	50 @ 90
Squash, Summer, # box.....	50 @ 1 00
Tomatoes, # box.....	1 25 @ 1 75
Tomatoes, Bay, # box.....	— @ —

POTATOES.

The market has been in weak and unsettled condition for both Old and New. The season for Old is about over and holders are naturally anxious to promptly close out the supplies now in hand. Rather than miss sales, heavy concessions were granted to buyers. New were rushed in faster than demand warranted, and

many were so inferior that extremely low prices had to be accepted.

Burbanks, River, # cental.....	40 @ 75
Burbanks, Bay country, # cental.....	50 @ 75
Burbanks, Humholdt.....	— @ —
Burbanks, Oregon.....	50 @ 75
River Reds.....	— @ —
Early Rose.....	— @ —
Garnet Chile.....	— @ —
New Potatoes, # cental.....	40 @ 80
Sweet, River, # cental.....	— @ —
Sweet, Merced.....	— @ —

The Fruit Market.

FRESH FRUITS.

Cherries made a larger display than any other tree fruit. There were heavy receipts at close of last week, including considerable damaged stock, and the market went to pieces. Good Black sold down to 40c. per box, and select went as low as 50c. Since then the market has recovered, ruling fairly steady at this writing for desirable qualities. Figs put in an appearance from Palm Springs in this State and from Yuma, Arizona. They were held within range of \$1.50 to \$2.50 per box, as to size and condition. Apricots of the Pringle variety were in fair supply, and a few Royals were received, but latter were hardly quotable in a regular way. Peaches of the Hale's Early variety were offered in a small quantity and brought good prices. Most of the berries now in season were in liberal receipt and sold at generally easy figures.

Apples, fancy, 4-tier box.....	— @ —
Apples, good to choice, # 50-lb box.....	1 00 @ 1 25
Apples, common to fair, # 50-lb box.....	50 @ 75
Apricots, Royal, # crate.....	90 @ 1 25
Apricots, Pringle, # box.....	50 @ 65
Cherries, Black Tartarian, # box.....	40 @ 65
Cherries, White and Red, # box.....	25 @ 40
Gooseberries, common, # lb.....	3 @ 4
Gooseberries, English, # lb.....	5 @ 6
Raspberries, # chest.....	5 00 @ 10 00
Raspberries, # crate.....	90 @ 1 15
Blackberries, # drawer.....	50 @ —
Logan Berries, # chest.....	8 00 @ 10 00
Cherry Plums, # box.....	50 @ 65
Currants, Red, # chest.....	4 00 @ 5 00
Peaches, # box.....	75 @ 1 25
Strawberries, Longworth, # chest.....	7 00 @ 9 00
Strawberries, Large, # chest.....	4 50 @ 6 00

DRIED FRUITS.

In the market for cured and evaporated fruits of coming crop, the only contracting reported is of apricots, buyers being found on both Eastern and European account at 7 @ 7 1/2 for good to choice in sacks, early deliveries at primary points. Last year's Apricots are still offering from jobbers in moderate quantities, and while quotations for same remain nominally as before, the market is weak. Where buyers were inclined to take hold freely, or showed inclination to clean up any particular holdings, they could doubtless operate at lower figures than quoted. For nearly all 1899 fruit now remaining unplaced the market is lacking in strength, the first and main object of most holders being to secure buyers, leaving prices for secondary consideration. The most pronounced weakness, however, is on Apples and Peaches, a large proportion of present holdings being of these two varieties. Quotations for both kinds show reduction, and at the reduced figures sellers are much more readily found than takers. It is doubtful if in a wholesale way choice Evaporated Apples of 1899 curing could at present be placed at over 4 1/2c. For sun-dried sliced Apples in sacks bids over 2 1/2c are not readily realized on round lot offerings. Peaches have been declining sharply in the strenuous efforts of owners to reduce holdings. Fair or standard quality Peaches, which sixty days ago brought 7 1/2c in Chicago, are not quotable in latter center to-day at over 4 1/2c, and some dealers bid still lower. All the low prices above named for old cured fruit are, of course, the result of selling pressure, no one caring to carry old stock into the new season, and consequently form no correct criterion of values likely to rule for new product. It is safe to assume, however, that values for new cured fruit of all varieties will open on a low basis, leaving any firmness which may be experienced a matter of development later on. Prunes are meeting with a very fair demand and give promise of cleaning up before new appear upon the market. While not quotably higher, the market is firmer and better average prices than lately current are being realized. Only medium sized and large Prunes are now obtainable, and smaller than 60-70s being about impossible to secure in noteworthy quantity.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb.....	10 @ 11
Apricots, Royal, fancy.....	11 @ 12
Apricots, Moorpark.....	13 @ 15
Apples, in 50-lb boxes, rings, pressed, fancy.....	5 1/4 @ 5 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.....	4 1/2 @ 5
Figs, White, fancy pressed.....	5 1/2 @ 3 1/2
Peaches, unpeeled, good to choice.....	4 1/2 @ 5
Peaches, unpeeled, fancy.....	6 1/2 @ 7 1/2
Peaches, peeled, in boxes.....	12 @ 15
Pears, unpeeled Bartlett's, halved, fancy.....	9 @ 9 1/2
Pears, halved, unpeeled Bartlett's.....	6 1/2 @ 7 1/2

Pears, quartered, unpeeled Bartlett's.....	6 1/2 @ 7 1/2
Plums, Black, pitted.....	6 1/2 @ 7 1/2
Plums, White and Red.....	7 @ 8
Prunes, in sacks, 40-50s.....	3 1/4 @ 4
50-60s.....	3 1/4 @ 3 1/2
60-70s.....	3 @ 3 1/2
70-80s.....	2 3/4 @ 3
Prunes in boxes, 1/4c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.....	— @ —
4 sizes Santa Claras and equal.....	— @ —
4 sizes San Joaquin and Northern.....	— @ —
Prunes, Silver.....	4 @ 6

COMMON SUN-DRIED.

Apples, sliced.....	3 @ 4
Apples, quartered.....	3 1/2 @ 4 1/2
Figs, Black.....	2 @ 3
Figs, White.....	3 @ 3 1/4
Peaches, unpeeled.....	3 @ 4

Recent advices by mail from New York furnish the following report of the dried fruit market on the Atlantic side:

The market for evaporated apples has shown no material change this week. Exporters have taken a fair quantity of prime at 6c, but toward the close holders generally ask more, especially for wood dried, though no important business reported above that figure as yet. Choice and fancy are meeting a fair jobbing demand at full late figures. Leaving prime outlet is small and prices comparatively low. Sun-dried sliced apples continue dull and weak, but quarters held about steady. Chops and waste have ruled quiet and easy, with prices low and irregular; much of the stock shows poor quality, and for such low figures have to be accepted, in instances under inside quotations, though really fancy stock is held at full quotations and occasional sales are reported at a slight premium. Evaporated raspberries have advanced under very light offerings and an increased demand. Cherries scarce and firm. California apricots quiet and without much change. Peaches dull and outside figures more extreme. Prunes firmer.

Apricots, Cal., Moorpark, # lb.....	14 @ 16
Apricots, Cal., Royal, # lb.....	12 1/2 @ 13 1/2
Peaches, Cal., peeled, # lb.....	16 @ 20
Peaches, Cal., unpeeled, in bxs, # lb.....	7 1/2 @ 9
Peaches, Cal., unpeeled, in bags, # lb.....	7 @ 8 1/2
Prunes, Cal., # lb.....	3 1/2 @ 7

RAISINS.

This market is almost featureless, with demand insignificant, which is apt to continue to be the case until business on coming crop begins. While there have been no official changes of quotations, most of the recent sales by jobbers have been at figures showing an utter disregard of the official price list.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, # box.....	1 60 @ —
do do 2-crown, # box.....	1 50 @ —
Valencia Layers, # 20-lb box.....	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6 1/4 @ —
Loose Muscatel, seedless.....	5 @ —
Pacifics.—2-crown loose Muscatel, 5 1/4c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c.	
Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.	

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, # lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, # lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.

Loose Valencia.—Fancy, # lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.

Valencia Clusters.—Fancy, # lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Oranges were in only moderate supply and there was a slightly firmer tone to the market, but demand was limited, and only for stock most desirable for shipment were full figures readily realized. Valencias were in favor for shipment, on account of presenting better keeping qualities at this late date than any other variety. Lemons met with fair custom, but at no quotable improvement in prices, the supply proving ample for the demand. Limes were offered at same rates last quoted, stocks being of fair proportions.

Oranges—Navels, fancy # box.....	2 50 @ 3 00
Navels, good to choice.....	1 50 @ 2 00
Navels, common to fair.....	1 25 @ 1 50
St. Valencias.....	2 00 @ 3 50
St. Michaels.....	1 50 @ 2 50
Mediterranean Sweet.....	1 25 @ 2 25
California Seedlings.....	75 @ 2 00
Lemons—California, select, # box.....	2 25 @ 2 50
California, good to choice.....	1 50 @ 2 00
California, common to fair.....	1 00 @ 1 25
Limes—Mexican, # box.....	4 00 @ 4 50
California, small box.....	50 @ 1 00

NUTS.

Spot stocks and offerings of both Almonds and Walnuts are of too light volume to admit of any noteworthy trading. Values are quotably unchanged, market presenting a good undertone. Peanuts are commanding full current rates, there being no excess of supplies of either imported or domestic.

California Almonds, shelled.....	14 @ 17
California Almonds, paper shell, # lb.....	10 @ 12
California Almonds, soft shell.....	8 @ 9
California Almonds, hard shell.....	4 @ 5
Walnuts, White, soft shell.....	9 @ 10
Walnuts, White, California, standard.....	7 @ 8
Chestnuts, California Italian.....	8 @ 10
Peanuts, California, fair to prime.....	5 @ 6
Peanuts, Eastern, hand-picked.....	6 @ 6 1/2
Pine Nuts.....	5 @ 6

WINE.

The wine market is showing practically the same condition as noted in previous issue, remaining quotable at 14 @ 16c per gallon wholesale for dry wines, vintage of 1899. In some instances these prices are realized at producing points, but most dealers insist on San Francisco deliveries being made at above figures. In other cases, growers refuse to unload at interior points at these prices. The values quoted fairly cover the range for fair Southern to choice Northern new dry wines. Although prospects appear in the main good for coming grape yield, indications are that tolerably firm prices will be current for desirable wine grapes the coming fall, or say about \$18 @ 20 per ton.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/4 sacks.....	151,011	5,774,488
Wheat, centals.....	239,607	6,207,710
Barley, centals.....	47,245	4,882,168
Oats, centals.....	14,630	739,079
Corn, centals.....	6,415	135,166
Rye, centals.....	1,125	97,867
Beans, sacks.....	1,903	356,186
Potatoes, sacks.....	20,535	1,151,602
Onions, sacks.....	4,723	153,128
Hay, tons.....	1,985	142,721
Wool, hales.....	1,480	51,537
Hops, hales.....	30	10,373

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/4 sacks.....	65,356	3,840,802
Wheat, centals.....	311,112	5,547,044
Barley, centals.....	1,076	3,791,567
Oats, centals.....	—	43,946
Corn, centals.....	51	18,338
Beans, sacks.....	130	25,885
Hay, hales.....	410	130,874
Wool, pounds.....	—	4,324,433
Hops, pounds.....	46,249	1,055,886
Honey, cases.....	47	3,577
Potatoes, packages.....	81	70,799

California Dried Fruit at New York.

NEW YORK, May 23.—Evaporated apples, common, 4 1/2 @ 5c; prime wire tray, 5 1/2 @ 6c; choice, 6 1/2 @ 7c; fancy, 7 1/2 @ 8c.

California dried fruits slow, with prices nominally unchanged.

Prunes, 3 1/2 @ 7c.

Apricots, Royal, 12 1/2 @ 14c; Moorpark, 15 @ 18c.

Peaches, unpeeled, 7 @ 9c; peeled, 16 @ 20c.



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THE FIELD.

The Hop Growers' Proposition.

We gave in last week's PACIFIC RURAL PRESS an account of a meeting of the hop growers of the Sacramento district. A later meeting was held May 16, as related by the Record-Union, there being present: George Wittenbrock, George Brewer, Charles Colquhoun, T. B. Lovdal, Daniel Flint, A. Mouton, A. A. Merkle, S. B. Slight, Smith Boyles, Paul Peterson, W. E. Beardslee, W. J. Hall, A. Gruber, B. W. Cavanaugh, John McMorry, W. E. Lovdal, F. V. Flint, F. L. White, P. C. Drescher, James Rooney, J. Casselman and W. G. Jasper of Wheatland.

The meeting was called to order by the chairman, Daniel Flint. Secretary Lovdal read a communication from Wm. H. Eagan, a prominent hop grower of Brooks, Or., stating that the proposition "is the only plan that will guarantee the grower a fair price for hops. The movement has universal approval in Oregon."

Attorney Elwood Bruner, who at the previous meeting had been instructed to draw up a call for a State convention of hop growers, embracing a plan for central organization to regulate the price of hops, said he thought beyond question that an organization such as was contemplated could be legally formed. One of the objects, he said, might be stated as being for the purpose of raising the quality of hops, as a man who roots out a certain percentage of his acreage would naturally destroy the poorest and retain the best, thereby securing a superior quality and better prices. The resolutions drawn by Mr. Bruner were read, as follows:

Resolved, By the hop growers of Sacramento county and vicinity in convention assembled:

1. That it is for the best interest of the hop-growing industry throughout the United States that immediate steps be taken to regulate the amount of hops grown to correspond with the demand for the same, to the end that more uniform and better prices may be obtained.

2. We recommend that a co-operative association be incorporated under the Statute of 1895, to be composed of the growers of California, each grower to be a member of the corporation.

3. That the capital stock of the corporation shall be nominal and the by-laws shall provide that the only indebtedness that can be incurred by the board of directors shall be for the maintenance of an office and the salaries of necessary officers to carry out the objects of the association.

4. That each member of the association shall sign an agreement binding himself to abide by the by-laws of the association, failing to do which the association may enforce the same in the law courts.

5. That no agreement shall be binding upon any one until — per cent of all the hop acreage of the State is represented by those who have signed the agreements.

6. The plan we recommend contemplates the formation of similar associations in the four great hop-growing States, viz: California, Oregon, Washington and New York.

7. That upon the formation of associations in each of the above-named States an organization be effected, composed of representatives from each of the States, to the end that uniformity may be ob-

served and all the hop growers of the United States treated with fairness and impartiality.

8. We recommend the holding of a State convention of hop growers, to be held at — at a date to be fixed, and that a committee be appointed by this meeting to make this plan known to the hop growers of the State and urge their attendance at the State convention.

A long discussion of the proposition followed, and J. M. McMorry, being directly questioned, said he would willingly enter into an agreement to curtail his acreage so as to increase prices, but that he would have nothing whatever to do with a scheme whereby somebody else should dispose of his crop.

T. B. Lovdal favored organization, and invoked statistics to show that had last year's crop been reduced 10% prices would have increased 100%, but he was inclined to believe that the association ought to be given special powers.

James Rooney, representing Horst Bros., inquired of Mr. Bruner whether there was any law to compel a grower even after he had become a member of the proposed organization, to destroy a portion of his acreage, or a portion of his crop.

Mr. Bruner explained that the association was voluntary and not compulsory, and that any agreement entered into would be binding. He read the statute cited in the resolution.

T. B. Lovdal was of the opinion that the association should be given power not only to reduce the acreage, but, if necessary to keep up prices, to order part of the harvest crop destroyed. That, however, it was agreed, was a question to come before a State convention.

The question as to whether Horst Bros. would be willing to become members of the proposed association came up, and Mr. Rooney explained that Mr. Uorst was at present in the East, and no one had authority to represent him. He felt, however, that he would agree to such a plan if it was made ironclad, so that every member would be absolutely bound.

Mr. Wittenbrock, while he was willing to have the acreage reduced, did not favor allowing the association to step in and destroy his crop when grown.

Mr. Lovdal said his idea was that the association, after careful consideration, might step in and say that 10% (or any per cent named) should be left on the vines, unpicked. He did not refer to destroying hops in the bale. Each member was an integral part of the association, and the board of directors would merely be the servants of the grower.

Mr. Bruner said that the association, if formed, would allow the body, in case of need, to go into the court, appoint a receiver and proceed to suppress the agreed percentage of acreage, provided any member should decline to keep his agreement.

The resolutions drawn by Mr. Bruner were again read and adopted without a dissenting vote.

The question of acreage obligated was brought up, and W. E. Lovdal thought the agreement should not be made binding upon the signers until at least 75% of the acreage of the State be obligated.

Mr. Bruner, T. B. Lovdal and George Wittenbrock agreed with Mr. Lovdal that at least 75% of the acreage of the State should be bound by the agreement, and on motion of Mr. Wittenbrock it was decided that delegates to the State convention, when it should be called, and they appointed, be instructed to demand that no agreement should be binding unless 75% of the acreage of the State was included in the association.

On motion, those present were assessed 10 cents per acre for the purpose of paying the expense of the meeting. The following committee of five was appointed to call on hop growers throughout the district to interest them in the plans adopted and to induce them to help out by paying in the assessment of 10 cents: W. G. Jasper, Wheatland; C. Colquhoun, American River; D. Flint, Cosumnes; W. H. Leeman, Yolo; A. A. Merkle, New Hope and vicinity.

W. E. Lovdal was added to the committee.

A committee of three, consisting of S. B. Slight, George Brewer and F. V. Flint, was appointed to draw up a programme for the next meeting, to be held at 1:30 p. m. Saturday, the 26th inst, in Sacramento.

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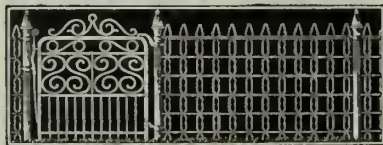
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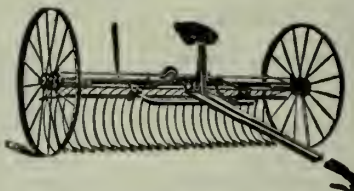
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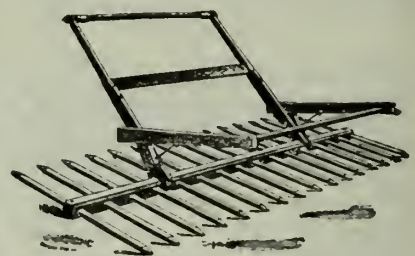
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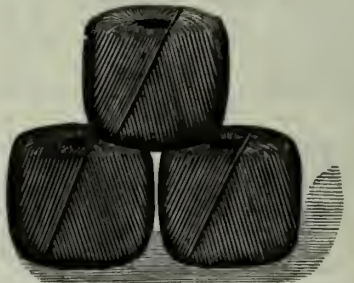
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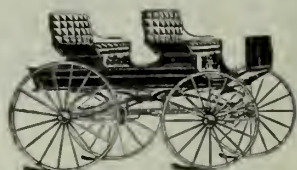
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List of U. S. Patents for Pacific Coast Inventors.

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FOR THE WEEK ENDING MAY 8, 1900.

- 649,400.—PUMP—E. P. Chilson, Chino, Cal.
649,238.—WASHING MACHINE—J. A. Gallagher, Stockton, Cal.
649,052.—ANIMAL TRAP—W. B. Hargan, Stockton, Cal.
649,167.—ENGINE SPEED REGULATOR—C. A. Huffmaster, San Leandro, Cal.
648,960.—ROLLER CRUSHER—F. A. Huntington, Oakland, Cal.
649,313.—WATER ELEVATOR—W. S. Jewell, Oakland, Cal.
649,314.—BRIDLE—G. A. Kelly, Dayton, Wash.
649,318.—FRUIT DRIER—J. L. Larson, Shaw, Ogn.
649,319.—FRUIT DRIER—J. L. Larson, Shaw, Ogn.
649,346.—VALVE—T. F. Payne, Spokane, Wash.
649,082.—FILTER—J. F. H. Stahle, Berkeley, Cal.
649,030.—CAN—W. H. Wright, San Jose, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

ENGINE SPEED REGULATOR.—C. A. Huffmaster, San Leandro, Cal. No. 649,167. Dated May 8, 1900. The object of this invention is to provide a means for varying the speed of an engine or other machine, with relation to that of the governor by which it is normally controlled so that without changing the speed of the governor that of the engine may be varied within certain limits. The governor insures a certain regularity of motion independent of the load, which may be a constantly varying one. It is however desirable in some cases to vary the speed of the engine, and, as the governor is set to operate and control the engine when running at a certain rate of speed, this engine is designed to vary the conditions and connections between the governor and the engine that the speed of the engine may be changed without altering the speed of the governor. This change may be effected by means of bevel-faced pulleys between the governor and the engine, and a means for moving one pulley towards or from the center of its companion, at the same time allowing one of the pulleys to yield laterally during its adjustment over the face of the other pulley.

AUTOMATIC WEIGHING MACHINE.—George Hoepner, Chicago, Ill., assignor to the Union Scale and Manufacturing Company of Sacramento, Cal. No. 648,617. Dated May 1, 1900. This invention relates to improvements in machines of that class which are designed to weigh powdered, granular or similar substances, and to deliver such substances in regular quantities into such receptacles as may be desired. It consists of a weighing receptacle, a yoke from which it is suspended having a scale beam projecting from it, a source of supply, means for delivering the material from the source of supply into the weighing receptacle, a tilting diaphragm movable to form receiving chambers alternately upon opposite sides, fulcrumed bottoms connected and movable with the diaphragm, and notched segments fulcrumed on the axis of the bottoms, a spring-pressed latch adapted to engage the notches in the segment and hold the latter and the bottoms in either position to which they are moved, an electro magnet, an armature having a rod fixed to it and adapted to engage and lift the latch to release the segment and bottoms, and an electric circuit including a fixed contact and a contact carried by the scale beam whereby the magnet is energized when the weight in the receptacle causes the latter to move.

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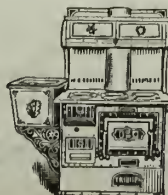
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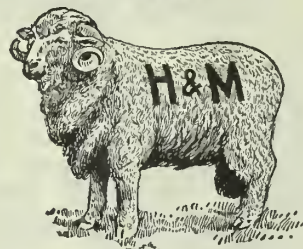
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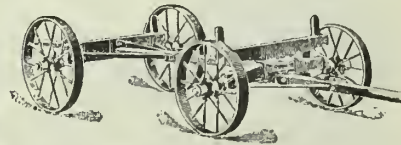
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Tulare Grange.

To THE EDITOR:—At the meeting of May 19th the third and fourth degrees were conferred on a class of three, in an impressive and interesting manner, after which the harvest feast was enjoyed.

The special committee on Children's Day programme reported and report was approved by the Grange. The Grange will meet at the usual hour, the day will be given to songs and recitations by the children, with a lunch.

A resolution was passed requesting all members to collect specimens of all grains grown in the valley, for exhibition in the Grange booth at the Agricultural fair to be held next fall.

The special committee appointed to inquire into the law providing for the planting of shade trees along highways reported that there is such a law; it provides that the Supervisors may pay \$1 each for all such shade trees, kept growing for four years, that it requires an ordinance of the Supervisors to enforce it and that the Supervisors have considered it. A committee was appointed to formulate a request to the Board of Supervisors to pass such an ordinance.

The special committee on co-operation in purchasing and mutual insurance asked for further time, which was given.

The committee appointed to prepare a communication to the State Educational Association on the necessity and utility of a change in the studies, now required in our public schools, by which more industrial instruction will be given and students will thereby be better prepared, on leaving school, for industrial work, reported and report was approved.

The special committee appointed to inquire as to the justice of the proposed constitutional amendment exempting State, county, municipal and district bonds from taxation, made the following report which, after a full discussion, was adopted as the view of Tulare Grange on this important subject:

Worthy Master, Officers and Members of Tulare Grange No. 198, P. of H.: Your committee appointed to inquire into and report on the proposed constitutional amendment exempting bonds from taxation, have carefully inquired into the same and find it will be submitted to the people for approval at the State election to be held next November.

We find the Constitution of California now declares bonds are property, and, as such, are and should be taxed in the locality where their payment is secured.

We find this provision of the Constitution is now evaded by the owners of bonds by reason of some real or supposed defect in the law enacted to enforce it.

We find no justification in bond holders thus evading their just portion of taxation necessary to support the Government, than whom no class of citizens are quicker to call on the Government to protect them in their property rights in bonds.

We find bondholders and owners are making energetic efforts to carry the proposed amendment exempting bonds from taxation.

We find no reason for exempting bonds from taxation; they should bear their just proportion of taxes, as every other class of property does.

We find that at a late convention of the State Bankers' Association of California the following resolution was passed:

"Resolved, The taxation of bonds, State, county and municipal, including school districts, is without resultant benefits of any kind, but is prolific of evil, as it occasions loss of money to the taxpayer, depreciating public and private credit, impairs respect for the law, and lessens the public conception of the sanctity of an oath; wherefore this convention recommends that the Constitution of the State be so amended as to exempt public securities from taxation."

We find no equity in the foregoing which can justify exempting bonds from taxation, but rather a mendacious admission that, when it comes to paying taxes on his bonds, the owner disregards his moral duty to honestly pay his tax, and has no respect for the law or for the sanctity of an oath.

If the Constitution limited the interest bonds should bear, and if that interest should not be in excess of the net earnings of property, over and above taxation and

all other expenses, which should include the owner's personal supervision and work, we would find no fault with exempting such bonds from taxation, but such is not now to be considered.

We have inquired as to what the net earnings of property is, taking in all industries in the State; we have found no thoughtful, well informed man who puts it higher than 3% per annum. We hold, then, this should be the limit of interest allowed by law on bonds exempt from taxation.

We ask all taxpayers to vote against the proposed amendment, and we ask the Worthy Lecturer of the State Grange of California to bring this subject before every subordinate Grange in California and before the State Grange for consideration.

In considering the report, the judgment lately rendered by the Supreme Court, in the case of the Germania Trust Company vs. the City and County of San Francisco, was duly considered and discussed.

This suit was for the return of tax, paid under protest, on bonds of "railroads and other quasi-public corporations held in this State." The proposed amendment to the Constitution is to exempt "State, county, municipal and district bonds."

The decision cannot, therefore, in any sense, be taken to include the bonds contemplated in the proposed constitutional amendment but only bonds of "railroads and other quasi-public corporations," and these are not to be taxed by reason of the Legislature of 1895 providing that such corporations shall be assessed at the full value of their property, and their bonds, which the Constitution provides are an interest in the property, shall not be taxed. The court holds to tax such bonds would be a double taxation of the same property and that such double taxation is not contemplated either in the Constitution or the law.

From this decision of the Supreme Court Judge Van Dyke very forcefully dissents. He says: "It is the purpose of the Constitution to reach and tax every species of credits, whether secured or unsecured. Whether, however, the scheme adopted worked as satisfactorily as its friends anticipated may well be doubted, but this does not change the fact that the purpose to tax credits of every kind is firmly fixed in the Constitution." As the Constitution makes bonds property and taxable where their payment is secured, and as it also provides that all railroad property shall be assessed at its full cash value, the Supreme Court seems to have taken the view that to assess the property and the bond which is secured by the property is double taxation and inequitable, although a strict construction of the Constitution provides bonds and railroads shall be both taxed. In this construction of the Constitution it may very reasonably be asked, Has the Supreme Court guessed equitably? Many will agree with Judge Van Dyke, it has not guessed correctly. Had it said: it is inequitable to assess the bond, and the property on which the bond is a lien, at its full value; therefore there must be some such omission of assessment as equity requires, and in adjusting this equity it is right the bond shall pay its tax as contemplated, and the property shall be exempt to that amount, it would really seem to have guessed more equitably and more in accordance with the Constitution.

Judge Van Dyke correctly says: "Nothing is more calculated to produce dissatisfaction and unrest, and justly so, than laws the operation of which favor, or seem to favor, the few or a class as against the great body of the people. It should require the most direct and imperative command of the Constitution to justify a decision of this court tending to such results, and none such exists in this case." That the Constitution contemplates the assessment of bonds—State, county, township, municipal and district; the Supreme Court affirms that the laws to enforce this provision of the Constitution is defective, is agreed; that this defect in the law should be allowed to stand should not be thought of; that it is taken advantage of by the bondholder to escape his just portion of taxation is undeniable; that it "impairs his re-

spect for the law and lessens his conception of the sanctity of an oath" is affirmed by himself; wherefore the law should be amended so as to require every bondholder to pay his pro rata of tax, and this would-be equity to exempt him from tax is wrong and unjust.

Bro. Thomas Jacob told of his work in getting contracts with the Cured Fruit Association and the selfish, unjust obstacles to it.

The Worthy Master made a pleasing address to the new members on the objects and work of the Order. J. T.

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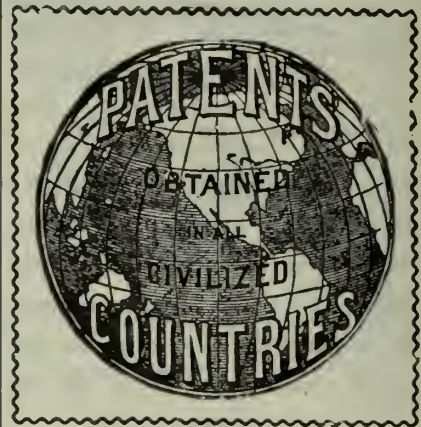
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TO THE EDITOR:—I have a heifer three years old. Two weeks after calving she was run and I suppose overheated, fell down and has not been able to stand since. She seems to have no use of her hind quarters. She has been in barn for ten days; eats and drinks well and suckles her calf. Can Dr. Creely help her?—SUBSCRIBER, Napa.

She has a wrenched back, if not worse. It does not resemble milk or calving fever. Application of powerful liniments and steaming hot blankets after the liniment are desirable. You had better have Dr. Defoe see her.

E. J. CREELY, D. V. S.
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A Review of Forcing Plants for Sale.

TO THE EDITOR:—This morning I read in the PACIFIC RURAL PRESS Mr. Gerard's question as to whether forcing vegetables would pay in California. I also read in the U. S. "Crop Reporter" a list of the contents of the coming year book. It will include a paper on the "Progress of Commercial Growing of Plants under Glass," by B. T. Galloway. It will also include much more of general interest.—ED BERWICK.

This year's Year Book of the U. S. Department of Agriculture, as Mr. Berwick says, will contain able discussions of many important agricultural topics. Applications for copies should be made early to U. S. Senators and Representatives for the distribution lies almost entirely with them.

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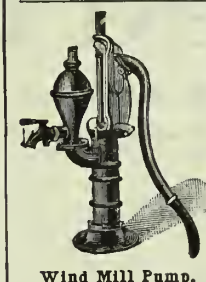
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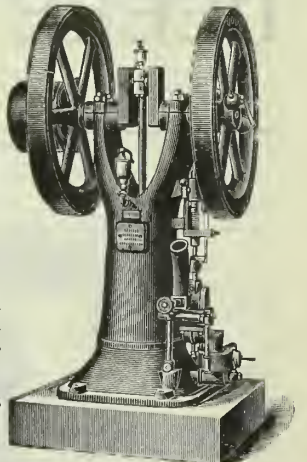
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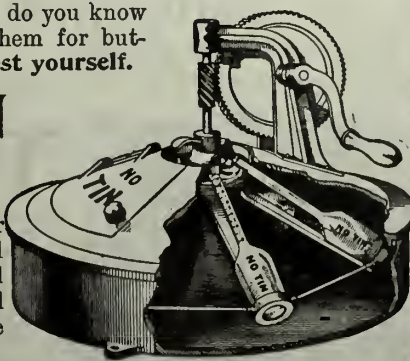
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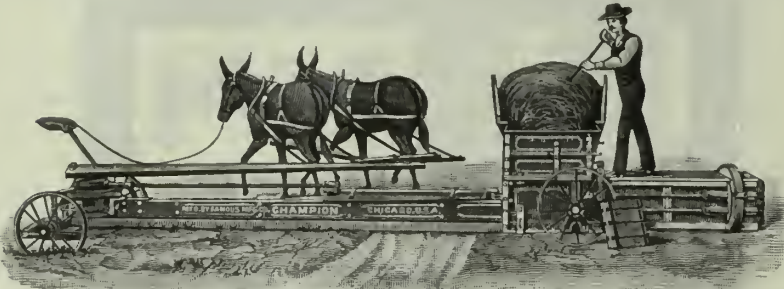
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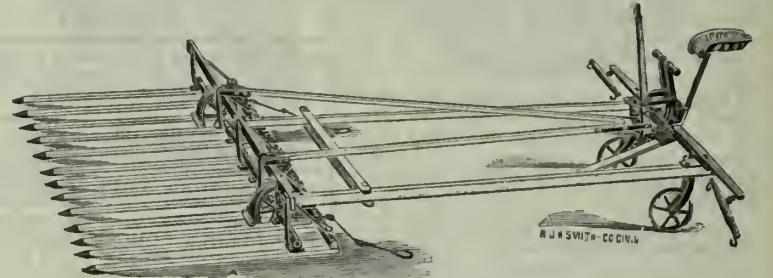


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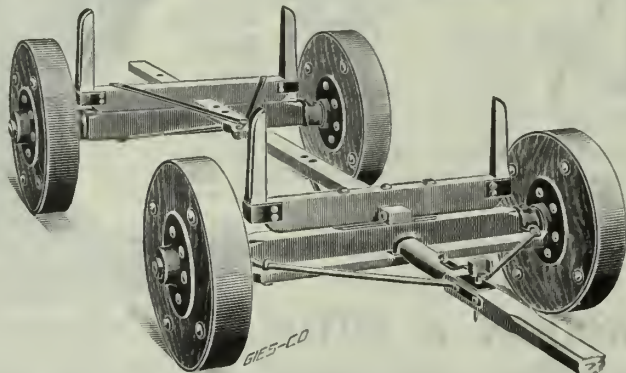
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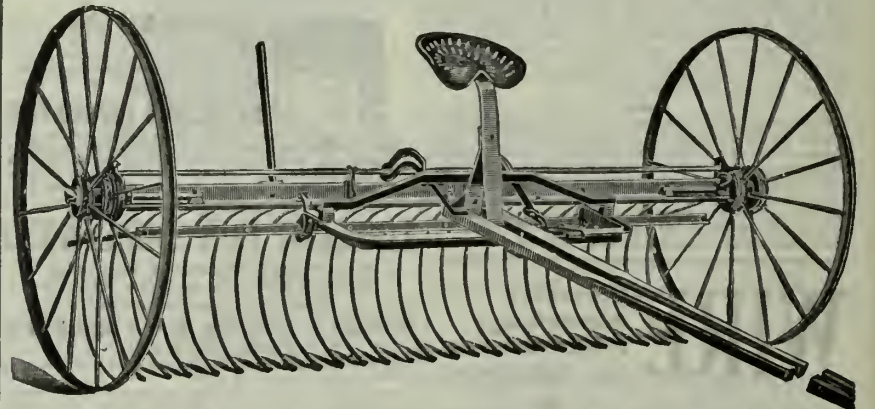
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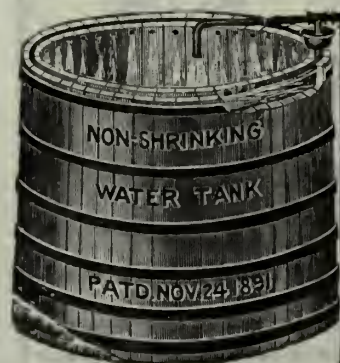
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 22.

SAN FRANCISCO, SATURDAY, JUNE 2, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

The Seriousness of Crown Gall.

Fruit planters are exhorted to plant only healthy trees and to properly treat those which are now infested with crown galls, because of the facts concerning it which were given last week on the basis of Prof. Toumey's demonstrations at the Arizona Experiment Station. This exhortation will be all the more effective as we reveal to our readers this week some of the data upon which Prof. Toumey bases his conception of the seriousness of the disease. Unfortunately, some of our readers do not need to go beyond their own experience for evidence of losses which crown gall may occasion.

In his bulletin Prof. Toumey remarks that with a plant disease that has been so little studied and so little understood, it is not possible to arrive at definite conclusions concerning losses incurred. From its wide dissemination and the great variety of economic plants that it infests, the yearly losses caused by it must be very great. As the disease usually attacks its host plant underground, it has frequently been overlooked by the fruit grower and has not received the attention that it merits. Thousands of trees have dwindled and died, or have failed to fruit or make a desirable annual growth of wood, without the owner recognizing the source of the trouble. After carefully examining hundreds of trees in many different orchards during the past seven years, Prof. Toumey is convinced that at least in Salt River valley much of the trouble can be directly credited to crown gall.

The first engraving on this page shows the present condition of an almond orchard at Glendale, Ariz., that four years ago, at first appearance, impressed Prof. Toumey as being one of the finest and most promising almond orchards that he had ever seen. Although at that time the trees were badly diseased, but little evidence of it appeared above ground. With each succeeding year a greater number of the trees died outright or broke off at or just beneath the surface of the ground, where developing galls had gradually weakened the stem. Prof. Toumey says that a very conservative estimate would place the losses in this one orchard at least \$10,000. Probably the losses to the deciduous fruit and grape growers of Arizona from this disease amounts in the



An Almond Orchard in Arizona Largely Destroyed Through Crown Gall.

aggregate to from \$40,000 to \$75,000 annually, possibly much more. In California, where the fruit industry is many times what it is in Arizona, the losses must be correspondingly greater.

The wide spread of this disease may not be known to many readers. Though it first came into prominence in California, we have no monopoly of it on this coast. It is being recognized nearly everywhere that fruit trees are grown. Prof. Toumey says the seriousness of crown gall in various and widely separated portions of the country is indicative of an enormous annual loss to the fruit industry. In estimating the amount of damage incurred by crown gall, consideration must be given to the fact that it usually occurs under ground, and is rarely seen except when the trees are taken from the nursery or when excavations are made at the crowns. The majority of diseased trees live on year after year,

but make less growth and, in all probability, produce less and poorer fruit than healthy trees. It is not sufficient for a tree to simply live. It must grow and fruit abundantly in order to be profitable. The total annual loss from this disease in this country in all probability reaches the enormous sum of from \$500,000 to \$1,000,000, possibly much more.

This disease must now be proceeded against systematically and rigorously. Nurseries must be upon new ground and infested trees destroyed. Every precaution must be taken against spreading fragments of the knots in the orchard by any means whatever. We know that contagion can be carried from tree to tree in the flow of irrigation water. Prof. Toumey says, also, that the conclusion seems to be warranted that the contagion can be carried in old decayed galls as well as in fresh tissue. The spores are so small that they may be carried by the wind. The decayed galls which break from the trees may be carried by the cultivator to healthy trees adjacent. If bark at the crown or surface roots be broken in cultivation the wound gives the disease a chance to establish itself. Suckers at the root crown also make openings where the germs may enter.

The lower engraving shows how the disease may be widely spread just as the phylloxera was spread in California. Prof. Toumey says the diseased trees dug up at the Glendale orchard were cut into stovewood and sold to various farmers throughout the neighborhood. The stumps of these trees had a great many large galls upon them, as shown in the engraving, and in the transportation of this wood the galls became scattered throughout the neighborhood. It hardly seems necessary to suggest that all galls should be carefully gathered and burned when removed from the trees, and that the diseased trunks should never be removed from the premises.

Contagion can be carried in the old, decayed galls, as well as in the fresh tissue. The spores can readily be carried by the wind and in water. The decayed galls which break from the tree may be carried about by the cultivator. If the bark at the crown or on surface roots be broken in cultivating, even on old trees, it gives the disease an opportunity to become established. Trees that are closely pruned frequently sucker at the crown.



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E. J. WICKSON.....Horticultural Editor.

San Francisco, June 2, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—An Almond Orchard in Arizona Largely Destroyed Through Crown Gall; Stumps of Diseased Trees Removed Because of Crown Gall Distributed for Stove-wood, 337.
EDITORIAL.—The Seriousness of Crown Gall, 337. The Week; Dairy Instruction at the University; Expert Advice on Rural Loans, 338. The Prune Arrangement, 339.
QUERIES AND REPLIES.—Tomato Troubles; Sunburn and Drouth; Budding on Suckers; Apricot Scale; Dying Almond Trees; Beans in the San Joaquin; Which Fruit to Plant, 339.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending May 28, 1900, 339.
HORTICULTURE.—Orange Tree Roots; Lemon Growing in California, 340.
THE ORNITHOLOGIST.—Value of Birds to the Fruit Grower, 341.
THE FIELD.—Disking Alfalfa, 341.
THE POULTRY YARD.—Poultry for Fancy and Profit; A Chapter on Chicks; Experiments in Poultry Feeding, 342.
THE APIARY.—Honey Interests of the San Joaquin, 342.
AGRICULTURAL REVIEW.—343.
THE HOME CIRCLE.—Each in All; The Gentleman in Khaki, 344.
Home Building; Making Over Blankets; John G. Whittier, 345.
DOMESTIC ECONOMY.—Salad and Salad Making; Domestic Hints; Hints to Housekeepers, 345.
THE MARKETS.—Produce Market; Fruit Markets, 346-347.
THE STOCK YARD.—On the Belgian Mare; What Bogus Butter Is Made Of, 348.
PATRONS OF HUSBANDRY.—Why Join the Grange? San Jose Grange; Sacramento Grange, 350.
MISCELLANEOUS.—The Census Now Being Taken; List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 349. A Brainy Horse; France Leads the World, 350. Hop Growers Combine and Call a Convention; To Preserve the Game; Pure Food Law, 351.

The Week.

Delightful summer weather has promoted growth and work in all outdoor lines. Nearly all reports we receive are of satisfactory conditions, except perhaps the shortage in farm labor, which promises to be quite an embarrassment to some lines. A vast multitude of able-bodied men is going to Alaska and the plague troubles is restricting the movement of Asiatics considerably. It will be hard to gather the crops unless more laborers should come out from under cover. Probably some help will come from the drouth districts where opportunities may be scant temporarily, and there may not be such a shortage as now seems to be threatened. City and town people who want an outing can no doubt get good air and something to go with it by helping the fruit growers in the chief growing sections.

There is great excitement in the raisin association, and one is prompted to fear that there may be too much personal interest and acrimony involved in the issue which is rife. At Fresno on Saturday a meeting voted strongly for a change in the presidency, but it seems that the vote was not large enough to be beyond question, and there may be much trouble over it. It seems very discouraging that men who have led great issues to striking success should become involved in personal strife and berate each other like fishwives, impugn each others' motives and strive for mastery even at the cost of vast public interests. The whole State will be keenly disappointed unless mutual forbearance or some other high motive shall bring the combatants to their senses.

This week is commercially broken by the Wednesday holiday and the markets are rather listless. Wheat has been drooping but at last futures have improved a little in sympathy with more favorable Eastern advices. Spot wheat has pursued an even course. No cargoes have cleared though four ships have gone upon the engaged list. One shipload of barley has started for Great Britain, but barley futures are weak and spot unchanged. Oats and corn are quiet. Forty-five tons of old mustard seed have gone to New York. Old hay is in fair demand at the same prices: new hay is not wanted and little is now arriving. Millfeeds are unchanged. Beef and pork are stationary: mutton has raised its inside figure. Dairy products have no new features. Poultry has improved, as Eastern receipts have lessened. Dry beans are unchanged. Potatoes are doing a little better, both new and old—the latter being sought for for late seeding. Choice new pota-

toes are bringing fair figures. Onions are steady: Australian onions have been cleaned up by the shipping demand, and it must be a traveled onion which starts from Australia and gets into hot water at Cape Nome. There has been a brisker trade in prunes: they are cleaning up well and are firm at a little better average price than for some time back. Wool is held back in the country, judging from the small receipts: Eastern buyers do not take hold yet, though local consumers are making some holes in the visible supplies.

Dairy Instruction at the University.

At a recent meeting of the Regents of the University of California, President Wheeler's proposition to engage an additional instructor in dairying for the College of Agriculture was approved. President Wheeler has taken hold of the matter with his characteristic energy and incisiveness, and we understand he has secured the consent of a thoroughly qualified and experienced man for the place. When the announcement is made we have no doubt that his training and record of accomplishment will commend the fitness and promise in the selection. President Wheeler is showing the keenest sympathy with the promotion of agricultural education along sound and most valuable lines, and that he has secured an addition to the agricultural staff which has long been sought by Professor Hilgard, but for which provision seemed hard to make, will commend President Wheeler's administration to those who have expectantly waited for fuller equipment of the college in lines which seemed to them of the most urgent importance.

As we have frequently pointed out, the University has been doing effective work in the dairy interest for many years. The stated instruction in breeding and feeding in dairy chemistry and bacteriology and in correct standards of excellence in dairy products has been carefully maintained and has been received by considerable classes of students, not alone those in the regular agricultural courses, but by special students and by students from the other colleges of the University who choose these subjects as part of their elective work because they desired to know about an industry of such importance to the State. The work of the experiment stations in introduction and trial of forage plants for different soils, and in distribution of seeds of the plants found by these experiments to be most promising has always constituted one of the most interesting and satisfactory branches of the University's work and publications. Sometimes as many as 700 applications for seed of a single forage plant have been filled in a single year and thousands of acres have been seeded with plants introduced and commended by the University. In its agricultural extension work, through farmers' institutes, the University has steadfastly maintained advanced dairy practice and has stimulated dairy progress in all parts of the State, as all those who are broadly informed on the subject well understand.

All this has been preparatory to the broader work in the dairy interest which the University proposes and for which we expect President Wheeler will make provision as soon as he can. Some people do not appreciate how difficult a work President Wheeler has to do in providing for the needs of a rapidly growing institution in a new country of such various resources and diversified industry as California presents. If it is appreciated that the University of California has only about one-fourth of the income per student which other universities of similar rank enjoy, some people would be less impatient in making demands and more energetic in securing for the institution the increased equipment and force which all departments of the University need to bring its work up to the breadth and thoroughness which all departments desire.

But all this aside, it ought to be a matter of satisfaction to those who desire the dairy industry of California advanced by fuller knowledge and improved practice, that the University is to have at once a well trained man fresh from the scenes of the greatest dairy activity and achievement at the East, to strengthen the hands of those who have labored long and faithfully toward higher ideals and better products. We have often pointed out in a general way those ideals and the importance of products of better commercial grade and standing. We are in need of the same progressive dairy achievements

which the Eastern regions stood in need of a quarter of a century ago and which they have secured through various efforts and agencies for dairy advancement. We need greater uniformity of high class dairy goods, and this must come through better understanding of the needful things all along the line from the pasture to the finished product. We need these things because they will increase the aggregate value of these products at least 25%. We think it will do more than that, but that will do as a safe estimate. We need all these things, also, because without them all stimulation of dairy products will be ruinous. Unless the efforts for dairy extension enable us to take a stronger hold upon home markets and to command the distant trade which belongs to this State, we shall have local overproduction, which will place our dairymen in the unfortunate position which some other producers have occupied, because they have not commanded commercial avenues adequate to their needs.

That the University is to take a new start in the advancement of the dairy interests of California is therefore of the highest importance. It is probable that the new instructor will find at first his chief activity in the extension work of the institution. He will need opportunity for local study and observation. He must know by contact with dairymen and by inspection of their pastures, herds and creameries what the local conditions are and how practice is proceeding with them. He will need personal acquaintance with the somewhat peculiar climates, materials and methods of California, and he must know our dairy people and their ideals and purposes. This can be secured by participation in Farmers' Institutes which take University men into all parts of the State, and he can give such extra time as may be required at each place to look quite thoroughly into local dairy affairs. He can judge the local practice and suggest ways of improvement and can help both farmers and dairy manufacturers to successfully meet the problems which confront them.

It will be fortunate also if the new instructor can get the ear of the general public that better conception of excellence in dairy products may prevail. As we took occasion some weeks ago to point out, we need much better knowledge of what good cheese is and its desirability as a food, not merely as a relish. The cheese making of California needs reform so radical as to be almost a revolution before the local product can win respect both at home and abroad. This can only be accomplished by an educational process permeating all who approach the interest either through manufacturing, marketing or consuming lines. An earnest and persistent popularization of high-class dairying and high-class products is needed in city and country and the agricultural department of the University is naturally expected to lead in this undertaking.

Expert Advice on Rural Loans.

It would be a great thing for the improvement of the rural districts, upon which must rest ultimately the prosperity of the towns, if every savings bank in the State would appoint as its manager of farm loans some man who combines a theoretical with a practical knowledge of agriculture, horticulture and stock growing, and who would take a personal interest in the promotion of rural industries on a conservative basis. Managing as he does, the banker has contrived to make the farmer believe that he is his worst enemy, although he ought to be his best friend.—Oakland Enquirer.

Our contemporary makes the above remarks in commenting favorably upon the contentions of the PACIFIC RURAL PRESS for a more rational treatment of agricultural security for loans. The Enquirer is right. The banks are apt to get either an agricultural pessimist who catches the voice of the frogs every time he goes to view a piece of country real estate, or they get a boomer who spends his time in the rose garden whenever he is sent on an errand of examination. The result of such reports is irregular, freaky, and unreasonable action by the banker, and it could hardly be otherwise. If examiners knew more about the agriculture of the State and less about much which goes under the name of agriculture, but which is a mixture of clap-trap and hifalutin, it would be vastly better for the banker and his clients. The whole trouble is traceable to the wrong conception of agriculture which so widely prevails. In loans or investments on other properties most careful expert reports are required and well paid for: if it is an agricultural affair the decisions

of the dawdlers upon the station platform or the chair-tippers at the country store are thought to be sufficient. When capitalists get a truer idea of what farming really is and the conditions which determine its success or failure, the adaptations and capabilities of the soil and climate, the economic considerations involved in choice of crops and all that, we shall have a call for the services of just such agricultural experts as the Oakland Enquirer mentions. Such experts are trained and trusted in European countries. In this country every man thinks he knows as much about farming as the most thorough expert, and a considerable sight more. Hence come nearly all our woes in agricultural investment and loan lines.

The Prune Arrangement.

Reports are to the effect that the promoters of the prune association on the new arrangement with the packers, which was outlined in our columns last week, are meeting with satisfactory progress. One of the directors recently said: "Some of the growers have become confused and think that under the modification the packers have something to do with fixing prices. I want to disabuse their minds of this error. Under the modified contract with the packers, the power of fixing and changing prices is absolutely in the hands of the directors of the association." The directors are convinced of the full desirability of proceeding along the new lines. They claim that it is not merely a modification to make the association go. In the judgment of the directors the slight changes are steps in advance, and they should have been taken even though they had obtained the 90% without difficulty. So far as going on with an insufficient per cent, it has been plainly evident from the first that the directors were unwilling to go on with even a per cent that the growers thought safe, because they know the obstacles in the way. They claim that it ought not to require any argument to convince the growers that the packers forming a combination to prevent competition among themselves is an advantage.

QUERIES AND REPLIES.

Tomato Troubles.

To THE EDITOR:—Last year the tomato vines were badly affected with blight. I tried sprinkling with water and other remedies with no good effect. It has started again this season. Can you give me a remedy? They wilt up, turn yellow and die. I see nothing to cause it.—J. F., Visalia.

To THE EDITOR:—I send with this letter two tomato vines and I would like you to tell me why they die as they do. The vines last year nearly all died in this vicinity and they are starting in to do the same this year. I would like to know what to do for them.—READER, Newman.

These two questions indicate that the tomato diseases which have done much harm for the last two years are again in evidence. There are several different diseases, some amenable to treatment and some beyond control so far we now know. The case described by our Visalia correspondent is what we have formerly called the collapse blight, because a plant or a part of a plant collapses, wilts and dies without sign of disease upon it. This is due to a bacterial blight. As the germs are in the circulation of the plant, and not upon the surface, no application can avail. The infection is known to be carried from one plant to another by insects which carry the juice on their beaks or mandibles. If insects are not present the disease travels very slowly and it can be largely checked by complete burning—top and root—of the plants which are killed by it.

There are other blights, but they are clearly seen by discoloration of the leaves. One is a blackening of the leaves followed by black decay of the fruit at the apex. We have not seen an instance of this disease this year. It will probably come later. Still another disease is that shown on the plants sent by our Newman correspondent. It is a fungus making its presence known by yellowish spots or pustules upon the leaf surface. The last two diseases are checked by the Bordeaux mixture sprayed upon the leaves as soon as the disease is first seen.

Sunburn and Drouth.

To THE EDITOR:—The enclosed bark comes from the base of a peach tree in a sandy loam. The tree

is dead but green; no leaves on it. There are only two trees which have leafed out and blossomed this year. They are set out among blackberries which receive plenty of water. Can you suggest something to save them?—READER, Los Angeles.

The immediate cause of injury to the bark pieces you send is sunburn. The failure of the tree to start growth is not attributable to this burn but lack of moisture in the soil. There is nothing to be done for the tree but to give it a good drink and it is doubtful if that would save it now because it has probably lost its absorbing root hairs through drouth. Many trees are in the unfortunate condition which you describe and many will perish this year in all probability. Where the injury has not gone too far water will pull them through.

Budding on Suckers.

To THE EDITOR:—Would it be practicable to cut prune trees off below the surface of the ground and let the peach sprout come up and bud to apricots? The trees are eight years old.—READER, Ventura county.

It would be practicable to bud into suckers from the peach root if such suckers should come in good shape, but we would not expect to get a very uniform orchard in that way. Besides, a tree grown in that way would be very likely to blow over, as a sucker has only a side hold and the old stump is more likely to rot than to heal over well. We would rather plant a new apricot tree than to work with a sucker from a peach root.

Apricot Scale.

To THE EDITOR:—Can you explain what is wrong with my 'cots? Inclosed twigs are off four-year-old Blenheims that have made a strong growth.—SUBSCRIBER, Santa Clara.

The twigs have brown apricot scale on them, but there seems also to be a freaky growth which the amount of scale present would not seem to be sufficient cause for. We cannot tell from the specimens what the cause may be. It may be in improper moisture conditions in the soil.

Lime on Orchard Land.

To THE EDITOR:—Is lime of any value for prunes and apricots on a rather sandy soil? If of value, how should it be used: air or water slaked, how much to a tree and when, on the surface or plowed under? Tell me all you can about it.—ORCHARDIST, San Juan.

Lime is seldom of direct value as plant food in California, because nearly all our soils are heavily supplied with lime. Soils of refractory character are sometimes rendered more friable by liming, and other plant foods may be released by its action. It is of less use on sandy soils than elsewhere, and in many cases would be of no appreciable advantage. The best way to apply is to scatter fresh lime on a growth of weeds in the fall and plow in as soon as the rain has slaked it down. The application ranges from half a ton to five times that amount.

Beans in the San Joaquin.

To THE EDITOR:—What kind of beans would yield best and pay most with the least irrigation? For instance, the ground is first flooded, plowed well, beans planted, and after that give them one wetting on tolerably sandy soil, new land?—J. A., Kingsburg.

The Pink bean has the reputation of being most hardy under heat and drouth, and is the most satisfactory field bean in your part of the valley. The irrigation you propose ought to bring a crop if you give good cultivation to preserve moisture in addition to the irrigation. If the plants get well rooted they will probably go through all right.

Which Fruit to Plant.

To THE EDITOR:—I am advised to root out some Nevadello Blanco olives in which I have an interest in San Bernardino county. It is dry land, but I am told we can get from wells water enough for deciduous fruits. I am advised by different parties to plant peaches, apricots and grapes. I cannot expect you to advise me as to the adaptation of each to the particular place, because you do not know the conditions; but I wish to know which of the three fruits you would advise planting for general considerations of profit, hardiness, ease of raising and care, etc., supposing the conditions are right.—READER, West Unity, Ohio.

Supposing that your soil and situation are right and that you can rely upon having irrigation water

enough whenever your dry land is too dry naturally to produce good large fruit, we would plant the peach as the hardiest, most regular in bearing and best fruit to sell of those you mention. The peach is a surer bearer than the apricot and it strikes a much larger market demand. We doubt if the demand for first-class canning and drying peaches, well grown in every respect, will ever be oversupplied. Grapes would be safer than peaches, if your water is likely to be at all scant, but the market outlook for the grape is more clouded. The apricot we have the fullest confidence in; but the apricot is more exacting in its requirements and will always be below the peach as an easily-grown fruit.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 28, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

SACRAMENTO VALLEY.

The weather has been generally favorable for crops, though somewhat cool for the maturing grain and fruit. A few days of warmer weather would be beneficial at this time. On some of the upland fields wheat in the milk stage was slightly injured by the north winds of the preceding week; pasturage also dried rapidly, and some damage was done in orange orchards. Haying continues, and a good crop is being gathered. Wheat prospects are still excellent. All deciduous fruits are looking well; pears, peaches and prunes will give good crops. Orange trees are full of buds, and a large yield is expected. Grapes are looking well. The almond crop in Yolo county is said to be the heaviest in several years. Hops are backward.

COAST AND BAY SECTIONS.

Warm, dry weather during the week caused grain and fruit to mature rapidly. Haying continued, and baling has commenced in some sections; the yield in the southern coast counties is said to be better than estimated, and the quality is excellent. Grain harvest has commenced in Monterey county; the yield is comparatively light. Hops and grapes are making rapid growth. Corn and potatoes are in good condition, and were benefitted by favorable weather during the week. Cherry growers are gathering the early fruit; the yield is below the average in some places, but generally fair. Orchardists in Santa Clara county are irrigating.

SAN JOAQUIN VALLEY.

Clear and pleasant weather with cool north wind has prevailed during the week; this has been most favorable for all growing crops. Haying has about ended; in some localities the crop was light, owing to damage from the rains in the early part of the month. Some grain has been cut, but the general harvest will begin the coming week; prospects are favorable for a large grain crop. Fruit of all kinds is progressing rapidly, and the prospects are generally satisfactory. Summer oranges are being shipped from Lindsay. Orange and lemon crops in the upper portion of the valley are reported in excellent condition. A large acreage in the vicinity of Merced is being planted in sweet potatoes.

SOUTHERN CALIFORNIA.

Warm weather continued during the week, with fog in some places, and conditions were generally favorable for all crops. Haying is in progress, and a fair crop is being gathered in some localities. Deciduous fruits are unusually backward, and in the vicinity of Pomona the trees are said to be still without foliage. Peaches and prunes will yield a very light crop, and apricots will be lighter than estimated. Grapes and citrus fruits are looking well, and give promise of good crops. Walnuts will be later than usual in maturing; there will be a fair yield.

LOS ANGELES SUMMARY.—Clear, warm weather gave corn, beans and beets fine growth, but abundant fogs now needed. Dry weather matured hay finely; baling in progress. Peach and prune trees still backward in leafing; poor prospects for crops.

EUREKA SUMMARY.—Showers during the week greatly benefited pasturage and crops. Oats are heading; some localities report considerable rust. Fruit prospects are generally very good.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, May 29, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Minimum Temperature for the Week.	Maximum Temperature for the Week.
Eureka.....	1.40	50.02	33.62	43.39	42	66
Red Bluff.....	.00	22.87	20.62	26.00	50	80
Sa ramento.....	.00	20.28	14.11	20.11	46	80
San Francisco.....	.00	18.42	16.10	22.28	48	68
Fresno.....	.00	10.14	7.18	8.73	46	86
Independence.....	.00	3.66	1.21	4.56	54	58
San Luis Obispo.....	.00	17.30	16.41	16.76	42	84
Los Angeles.....	.00	7.83	5.01	17.15	54	82
San Diego.....	.00	5.98	4.96	9.35	56	70
Yuma.....	.00	1.29	1.34	2.89	64	102

HORTICULTURE.

Orange Tree Roots.

By J. H. REED: a report to the Riverside Horticultural Club.

The roots are the stomach, as the leaves are the lungs, of the tree. There are real advantages to the orchardist in knowing somewhat definitely about the vital organs. To provide proper food for, and get it to the stomach to the best advantage, we need at least to know its location and how it takes its food.

My understanding of the object of these special committees is that they are to secure facts and results of actual experiences, rather than to discuss theories or general practices. My effort in recent investigations has been to learn as definitely as possible the location and arrangement of this root system of the orange trees. A good many of the notions of most of us about the roots are rather vague. Till the X rays are better adapted for such work, we must use homelier means for peering about underground.

SUBTERRANEAN EXPLORATIONS.—Recently I found workmen digging a trench 2½ feet deep diagonally through a fifteen-acre, ten-year-old orchard. It opened a good object lesson. These are some of the facts I learned there:

The leaders of the root system, as opened up, I found mostly massed in a stratum of earth between from 8 to 10 inches, and 18 to 20 inches from the surface. These leaders or main stems varied from ½ of an inch and less in diameter to ¾, the largest I found. The mass of fibrous roots literally filled this space, with great uniformity, the distance from the tree making no perceptible difference in their abundance. Below this layer, so crowded with roots, I found occasional leaders, some of them extending down below the bottom of the trench. The fibrous roots extended considerably above the limit of 8 to 10 inches, varying, evidently, according to the depth of tillage. I remembered to have noticed very deep plowing in the orchard several times when it was young. This, to me, explained why the main roots were at a good depth. Of late years it has not been plowed deep, and the small roots have worked nearer the surface where the soil favored and irrigation had been heaviest. Some roots reached much deeper than indicated above.

Last week I traced a small leader in my own orchard to a depth of over 5 feet. In a distance of several yards the small leader did not decrease in size perceptibly.

PREVALENCE OF SURFACE ROOTS.—The practical value of these single instances alone would be small, as conditions necessarily vary the conditions of the roots. But more or less definite research in the same direction during several years indicate to me that the root system from which our orange trees obtain their nutriment is largely found within a comparatively thin continuous layer of earth, not far below the surface, varying in thickness and depth, by the character of the soil somewhat, but more by the treatment of the earth above it, the thoroughness of the irrigation, and by the manner of getting artificial food to it. Of these three items I prefer to delay speaking till after further investigations, other than to say that it seems to me amply demonstrated that it is wiser to distribute fertilizer as evenly as possible over the entire surface, and to place it as near the roots as possible.

While studying the trench above referred to, I was impressed with this fact: that while digging across the spaces over which the irrigation furrows passed, the workmen easily removed the earth with the shovel only, while in the spaces between the trees along the rows parallel with the irrigating furrows, after removing a few inches of top earth, they were obliged to loosen with a pick to a depth of from 6 to 10 or 12 inches, below which the earth seemed as moist and loose as in the irrigated spaces.

HARDPAN.—I will not go into the matter of artificial hardpan at this time, further than to state that all my observations during the winter decidedly confirm me in the opinions expressed in a paper last fall that where, as is the case in Riverside, the irrigating water does not chemically carry salts to act upon the soil, this so-called hardpan, attracting so much attention of late, may be largely, if not entirely, prevented, and, from my more recent study of the root system, I am more fully persuaded than ever that while the upper fibrous roots may be cut by deep plowing with the ordinary plow, and even some of the upper leaders without much injury, in fact, sometimes greatly to the advantage of the tree, the subsoil plow cannot be run through the main root system—12, 15 or 18 inches—without very considerable injury.

I want a brief word as to a matter that has much interested me during recent investigations among the roots: I frequently find roots in an abnormal condition, seemingly diseased in various ways, and I can but think that sooner or later we will begin to examine the root system for some of the yet obscure ailments of our trees, instead of simply pouring more

rich food into their stomachs. We seem to take it for granted that when a tree shows lack of vigor it is simply hungry. I am inclined to think that when we look into the matter carefully we shall find that not infrequently too much or improper feeding, or some deleterious substance in the soil, injuring the delicate organization of the roots, is the real cause of the trouble.

Lemon Growing in California.

From a paper by W. G. RICHARDS of Elsinore at a local club meeting.

As is well known to all who have kept in touch with the industry, the last two years have been rather discouraging to the lemon producer. The low prices that have prevailed have been largely the result of foreign competition, and until the duty of 1 cent a pound was placed on citrus fruits, the prospect for the existence of the industry was anything but encouraging. The cent a pound, probably, somewhere near represents the difference between European and American labor, and just so long as that difference lasts, and I sincerely hope it always will last, it must be made good by a duty. If some of our friends should conclude we did not need that protection and should abolish the duty, then the industry will begin to languish again, and if the open door is kept open long enough, lemon raising in California will be a thing of the past.

As the foreigner can get his labor much cheaper than we, and as he has a decided advantage in transportation charges, and can doubtless raise as many and as good lemons as we can, whatever price we may make he can make a better one and raise as good lemons as we can, whatever price we may quote he can make a better one and live. If the duty of a cent a pound can be maintained, and I believe it will be, the lemon grower has quite a hopeful prospect before him. It is true that the crop raised is getting larger and larger every year, but it is equally true that the market for the goods can be constantly expanded, for as transcontinental railways multiply, which they are sure to do, and the struggle for business keeps cutting down the freight rates, the entire lemon trade of the United States can be supplied by lemons raised within its own borders.

TOO GREAT EXPECTATIONS.—I am afraid that too many who have embarked in the lemon business have had visions of fabulous profits, and consequent trips to Europe in their minds and find it difficult to adapt themselves to fair profits and hard work.

The lemon business, like any other business, has its ups and downs; its years when prices are good and everything looks easy and lovely and when the grower is prosperous, and he swells up and thinks it is all owing to his superior skill and management, and that he is on the high road to fortune and an easy, independent life. Then the year of adversity comes and prices are away down out of sight and he can hardly get enough out of the crop to pay for the picking. Then he begins to think that he is not so much of a manager as he thought he was, and he entertains the idea of trading the orchard off for something that he thinks is booming. But don't do that; cut down expenses until you can make both ends meet some way; and keep right on sawing wood. Next year will probably be better. It is not wise to give up on one bad year. In the long run the bitter and the sweet will about even up, the good years about equal the bad ones.

I think many have rushed into the lemon business basing their chances of success on the high prices that lemons reach, at some time, nearly every year. To such disappointment is sure to follow. It is true that lemons, at times, reach a price that makes their use almost prohibitive, but it should be remembered that when lemons command such high prices, say from five to ten dollars a box, very few have any lemons to sell, which fact of course accounts for the high price. The grower then goes out and looks the orchard over and sees a lot of little lemons about as large as walnuts and how he wishes they were up to size, and speculates on how much good money they will bring when they are a couple or three months older, always basing his anticipations on the then high price. When the two or three months have rolled around and he is all ready to reap the rich harvest he has been promising himself, he finds that all the rest of the growers have lemons to sell, too, and that the price that he can get, some way, does not seem to agree very well with the quotations. Still he is offered what seems a very fair price, but when he has figured up the picking, boxing, packing, hauling, shrinkage, commission, etc., he finds the net price he is getting is a very unsatisfactory one. One of the main features of its unsatisfactoriness is that it is so much less than he had been figuring on. Now if he will stop and do a little business figuring he will probably find that he is not doing so badly after all.

REASONABLE ANTICIPATIONS.—If he will take as a capital invested all that he has paid out from time to time, that has been put in the orchard as permanent improvements, allowing about common day wages for his own time, if it has been devoted to the orchard, I

think he will find that the net returns from the sale of his lemons will make him about as large a percentage on his money as he could get in any other ordinary investment. The trouble is that most orchardists expect a large amount of profit from a small amount of business, as is shown in expecting a ten-acre orchard to keep him and a good sized family in comfortable style, pay all expenses and leave a good sum to put away besides. Now that is expecting a good deal of a little patch of ground. All that ought to be required of the orchard is to pay a good rate of interest on the actual investment. I think lemon orchards well located and properly taken care of will do that, one year with another. The lemon grower must look for his profits, not in the high price that he can get for his crop, but rather in the large quantity that he can make his trees produce him. He must put his business on that basis and if he cannot figure out a profit therefrom he will doubtless find it convenient, sooner or later, to quit the business.

The time of large returns from a small amount of business, in growing lemons, has passed, if it ever existed. In the nature of things the time of reasonable profits was sure to come, for if by any chance extraordinarily large profits from the business could be maintained, it would naturally invite a large amount of capital to seek employment in that direction and consequently a largely increased product, which anyone can readily see could only result in lowering the price and profits.

THE BUSINESS.—The lemon business is probably as sensitive to that great law of supply and demand as any business in the world. This can easily be seen in the wild fluctuations in the price of the fruit. When fruit is scarce there seems hardly an upward limit to which the price will go, and when the supply is plentiful the limit the other way seems about as hard to be reached. Now this condition of things would be all well enough, as things would average up about right, if it was not for the fact that when prices are so high the grower has no lemons to sell and, of course, cannot get any benefit from the high prices, and when the price is away down he has lemons, and must get them off his hands in a reasonable time or they will become worthless.

The question now arises, Is there a remedy? I think there is, but the remedy is rather a forlorn one, although simple. Invent some way of keeping the fruit indefinitely. From time to time we hear of someone having discovered a process by which lemons can be kept as long as desired, but some way or other these brilliant schemes do not seem to hold out very well. If anyone has stumbled on to a process that is all that could be wished of it, he is succeeding splendidly, so far as I know, in keeping it to himself. The only process I know of for keeping lemons is quite a long one and commences way back when the lemon is being picked. The lemon must be handled carefully at all times and not allowed to become bruised to the slightest extent. It must then be surrounded by the proper conditions, which are, an even temperature, as low as it is convenient to get it; exclusion from draughts but with good ventilation; placed in boxes not over 6 inches deep with an air space of about an inch between boxes; and absolute darkness. I have kept lemons under those conditions for seven months and they came out in good shape, with a very small proportion of decayed ones. My observation has been, however, that when a lemon has been kept until it is nice and soft and has a skin like velvet, it must be sold in a nearby market. Bringing it out to the light, handling and subjecting it to changed conditions of temperature do not seem to agree with it for some reason that I have not yet seen very satisfactorily explained. It soon commences to go to pieces, and if shipped East, will probably reach its destination in bad condition. In view of these facts it would seem that lemons should find a market, if in the East, not long after they are picked. From what I can gather I am inclined to think, all things considered, the best results have been obtained, with eastern shipments, by packing the lemons green and shipping as soon as packed. By the time they get East and into the hands of the retailer they will be nicely colored, the juice will be fully developed and they will be in about their prime. If the retailer then takes care of them he will have little loss from decay.

HANDLING LEMONS.—I will venture a word to the retailer. Many will open a box of lemons and put them out somewhere near the front door, where they can be seen and get all the wind that blows in through the open door. That would be all right enough if his trade was large enough so he sold a box in a day or two, but when they stay there for a week or more, as is often the case, he will find he is suffering quite a loss from their drying up and becoming unsalable. He should expose no more than he can sell in a day or two and keep the rest down in the cellar in the dark and bring them up, a few at a time, as needed. In this way he would greatly lessen his losses and his goods would always present a nice fresh appearance.

So long as the present general policy of producing lemons is pursued, the efforts of the grower must be constantly exerted in three principal directions: A better product; improved packing; and discovery of new uses and markets.

THE ORNITHOLOGIST.

Value of Birds to the Fruit Grower.

By W. O. EMERSON of Haywards at the Fruit Growers' Convention.

From an economic point of view the value of bird life and the relation of the birds to the farmer and fruit grower cannot be overestimated. They play the part of an important factor in the preservation of fruit from the depredations of insect pests, and as such should have the fullest protection from orchardists. Their economic value was not investigated to any extent until some ten years ago, when the United States Department of Agriculture formed a Division of Economic Ornithology for the scientific and careful examination of the food of birds.

Since that time bulletins have been regularly issued on the beneficial birds found throughout the United States. Of the 13,000 species of birds known to science about 1000 are known to North American. Of the land birds there are some 360 which live entirely on insects; 630 live more or less on insect life; while nearly 100 depend entirely on such food as the seeds of weeds and wild grain the year round.

Birds occupy a secondary place in the scale of life (animals occupying the first) and are almost closely related to the reptiles, as we find the earliest types having teeth, representatives of the early Jurassic period. Birds are found at home from pole to pole equally content whether on ocean wave, in Arctic snows, on arid deserts or in the dense shade of the tropical forests.

Every day we find that the birds are preventing the increase of injurious insects and small rodents as well as of harmful plant seeds. Take any one day and consider the amount of food a bird consumes, particularly when they have broods of from four to nine, each little month taking in several ounces per day. This destruction of injurious material is not only going on through each day, but is continued through the night by the owls, nighthawks and poor-wills. Swallows and swifts keep down the insect growth in air, while various species of flycatchers, warblers, vireos and humming birds are busy in about the foliage. Woodpeckers, nuthatches, titmice and gnatcatchers, are always busy working over the limbs and tree trunks, while innumerable varieties of thrushes and sparrows are continually at work on the ground seeking terrestrial insects as well as worms and seeds.

WHAT BIRDS CONSUME.—Birds digest their food so rapidly that it is difficult to determine just how much they consume during a day's feeding. E. H. Forbush of the Board of Agriculture of Massachusetts states that the stomach of four small chickadees contained 1028 eggs of the canker worm; the stomachs of four others had about 600 eggs and 105 female moths of the canker worm in them. It was estimated that one chickadee feeding for twenty-five days would destroy some 138,750 eggs of this noxious worm, a phenomenal amount for so small a bird.

Prof. Forbes, Director of the Illinois State Laboratory of Natural History, found in the stomach of a single robin 175 bibis (a fly) which, in the larvæ stage, feeds on the roots of grass. From a few facts of this nature we can see what an economic factor the birds are, flitting about our farms and orchards by day and night. Hawks and owls especially, that are usually so condemned by the farmer and sportsmen in general, are constantly protecting the crops by killing off thousands of small rodents so destructive to grain and trees, and also by consuming millions of grasshoppers in the fall of the year. In fact many species of hawks prey wholly on grasshoppers.

OWLS AND MICE.—Dr. A. K. Fisher, Assistant of the United States Department of Agriculture, found in the pellets cast up by a barn owl that 200 contained 450 small mammals, no less than 225 of these being skulls of the field and meadow mice. Still we find that in many of our States a bounty is offered for the heads of hawks and owls. The State of Pennsylvania sustained a loss of nearly four millions of dollars in eighteen months from the killing of over 100,000 of these birds. From my personal experience of one nesting site in an old sycamore limb, along the edge of my orchard, I took from a barn owl's nest five pocket gophers, two wood rats, three small lizards and two snakes. This was the food brought the young in one night. I have only found two species of hawks to be harmful about the habitations of man; of the owls all are beneficial.

As time rolls on and vast stretches of land come under cultivation we shall see the need of giving more attention to the study and protection of bird life, as the birds seek homes about our premises, to raise their broods and render a valuable service in keeping in check millions of noxious insect pests. It is stated as a fact by one of the leading entomologists of the United States that insects alone cause an annual loss of at least \$200,000,000 to the agricultural interests of this country. Thousands of the trees in our great city parks as well as vast forests are already affected by a species of scale, which cannot be checked without a great outlay of time and money, but which can be kept in check if we will give protec-

tion to our bird life by wise legislation. The amount of harmful seeds destroyed by birds throughout the year amounts into millions of pounds, as one of the United States Department of Agriculture ornithologists has figured out. One species of seed-eating birds of the Junco family, consumes at the rate of one-fourth of an ounce per day, and they average ten juncos to each square mile of land. In 200 days this species in the State of Iowa alone consumes 875 tons of noxious weed seed in a single season. Large as the figures seem they certainly fall far short of the reality.

THEIR ECONOMIC VALUE.—In treating of the economic value of birds it has been mainly to show them as consuming insects only, whereas we here find them feeding on thousands of pounds of harmful weed seeds as well, which fact has not been fully known and appreciated. One of our many small sparrows will fill his crop with a thousand seeds of the pigweed for its breakfast, and as many as 7500 seeds have been counted from a dove's crop. Among many of the birds which feed on seeds are the pawhees, song sparrows, lark finches, horned larks, grosbeaks, gambels, golden-crowned and field sparrows as well as seven varieties of goldfinches and others.

I find thirty-one species noted feeding on seeds about my home. There are eighty-four species that can be found through parts of the year that live entirely on insects. Among them are three forms of wrens, five warblers, two titmice, four vireos and woodpeckers, juncos, kinglets, Audubon's warbler and two species of goldfinch. I have seen two species feeding on the apricot scale. The bush tit, warbling vireo, yellow warbler and plain titmouse will hunt the pear and apple orchard over for larvæ of the codlin moth.

Of birds that have been proven harmful to the orchardist may be mentioned more particularly the house-finch, sometimes known as the red-headed linnet. They will eat the base of the prune and cherry blossoms for the sweet juice of the flower. Gambels and golden-crowned sparrows are the worst pests for destroying fruit blossoms and young peas. The two sparrows named leave soon after the trees have blossomed and are only a winter resident with us. There is only one remedy for them—powder and dust shot. From the following subjoined notes from the laboratory work of investigation of birds' stomachs from the Department of Agriculture will be seen the character of the foods of many of our common birds: In 330 stomachs of the robin 42% was animal matter, 19% consisted of beetles; caterpillars 6%, grasshoppers, 30%, vegetable matter, 7%, besides wild fruits. The food of the wrens is 98% insectivorous the year round, only 2% being vegetable. They feed on bugs, spiders, caterpillars, flies and larvæ wherever found.

All thrushes' food consists of beetles, bugs, spiders, grasshoppers, caterpillars, earth worms and a few seeds and wild fruits. Of the orioles' food caterpillars constituted 4% of that found in 173 stomachs, other insects being bugs, beetles, ants, wasps and grasshoppers, besides larvæ and bark lice. Of 238 stomachs of the meadow lark examined animal food, that is, insects, constituted 73%; vegetable matter, 27%; 14% of which was hard weed seeds and grain. They consume cutworms by thousands, also wireworms and beetles.

FED ON INSECTS.—The bee martin or kingbird is a great feeder on insects. Out of 281 stomachs collected from different parts of the country only fourteen honey bees were found, the majority being drones. The great bulk of food of this species is largely noxious species of beetles (the May and click varieties), wireworms, wasps, weevils, crickets and grasshoppers. All the flycatchers, of which there many species, are among the most beneficial of the birds frequenting orchards.

Grosbeaks feed largely on vegetable buds of forest trees and wild fruits. Of insects they consume corn worms, beetles, caterpillars of all forms, and in Colorado they have been known to clean out noxious potato beetles when nothing else would touch them, bringing their young to the patches to feed as soon as they could fly. Bluejays, we find, have a hard name, but from 292 stomachs examined animal matter comprised 24% and vegetable matter 76% of this bird's diet. Only five stomachs had any remains of small birds or egg shells. Besides this food the jay eats mice, salamanders, snails, beetles, grasshoppers, caterpillars, more than 19% of their whole food consisting of harmful insects. In the fall months their food consists of from 64 to 83% of acorns.

While many of our birds are known to now and then eat of our fruits, if we carefully compare the benefits accruing from their work the balance will easily be in their favor. Why should we not give them some protection? Thousands are being killed every month by one means or another and they threaten to soon become scarce about our homes and orchards. One instance I wish to give as showing the wholesale destruction of bird life for the San Francisco markets which is now going on:

INTERESTING INSTANCES.—In a letter to Chester Barlow, secretary of the Cooper Ornithological Club, from W. B. Sampson of Stockton, and dated February 14, 1898, Mr. Sampson states that on the day before he happened along a levee some distance from the city, where the brush is inhabited by thousands

of small birds. He noticed that two Italians had a fine mesh net 50 feet long stretched over the brush, as he thought, for repairs, but was surprised at seeing them begin to beat the brush with sticks 100 yards beyond the end of the net, driving all the birds into it. They were snaring them, as they said, for the markets. Mr. Sampson saw them take out fifty birds and they had some 300 caught as the result of a day's work. They were questioned and admitted having practiced snaring for some time, and had captured as many as 2000 birds in a day and sent them to the San Francisco market as "reed birds."

No doubt there are many more practicing this destruction in other parts of California and if it is kept up the results can be foreseen. It will result in an increase of pests on our farms and consequent damage to the fruit growing industry. Many States have enacted strict and most commendable laws to protect the native birds from such wanton slaughter. Why shall not California do the same? It is a question vitally important to the fruit grower of the future.

THE FIELD.

Disking Alfalfa.

Loosening of the surface of an old alfalfa field may be valuable in many ways. In Kansas they have undertaken it to destroy the nests of grasshopper eggs, which are near the surface. They also find that it roots out shallow rooting grasses which make the field foul. It is likely that foxtail can be reduced in this way. At any rate the experience is interesting, and it is given in the last report of the Kansas Board of Agriculture as accomplished by the local experiment station.

DOES NOT INJURE ALFALFA.—A study of the alfalfa plant itself became necessary before further procedure. It was found that it secured its water supply through roots extending some 12 to 14 feet beneath the surface, and that the crown could be split in several pieces and yet the life of the plant go on unimpaired. In the spring of 1898 it was recommended, therefore, to the farmers interested that they disk their alfalfa meadows as early in the spring as the ground becomes tillable after the frost, thus breaking up these egg pods and exposing them to be destroyed by birds, other insects and climatic influences. This disking many feared would destroy the alfalfa. One hundred and sixty acres, which had been sown two years previously on sod, was given for a test. The harrow was run over it in March, and the ground cross-harrowed with a slant-tooth leveling harrow. When the work was done the field presented much the appearance of a wheat field ready for the seed.

IMPROVES THE GROWTH.—On the 23d of July the first crop of alfalfa upon this experimental quarter section was cut. The average height of the stalks was 29 inches, stocks of extreme length being found 33 inches. The yield of this first crop was 1½ tons per acre. The grasshoppers had not appeared. Not only had they disappeared, but the native grasses which threatened to reclaim the land were likewise removed. Two quarter sections of alfalfa land not far removed from this spot were rendered practically worthless by the presence of large numbers of grasshoppers throughout the growing season.

EARLIER GROWTH.—The results thus far were gratifying. The practical benefits derived from this manner of culture, however, were more emphatically expressed upon the appearance of the second crop, which matured unattended by grasshoppers some ten days earlier than adjoining meadows, and bearing stalks of extreme length of 32 inches; average length, 28 inches. The average yield of this crop was one ton per acre.

CONFIRMATION.—One season's study not being sufficient to thoroughly satisfy us, this method of culture was again resumed and 800 acres were disked in a like manner last spring, giving equally satisfactory results. The yield was not quite so great, owing to the fact that these lands were closely pastured until the first of May, after which they were allowed to grow for forage. The strong, vigorous growth of the plant, however, was noticeable, likewise the almost total absence of grasshoppers and native grasses were points noted by the farmers as they drove over the meadows under experimentation. The 160 acres disked last season were left uncultivated the following spring, and the beneficial effects of last season's culture appeared again this season, since in both the first and second crops there was a material increase in the yield over that of adjoining lands. In fact, observations show that in the territory under discussion where alfalfa is sown upon sod, if this method of culture is not carried on the native grasses will crowd out the alfalfa and reclaim the soil, whereas, on the contrary, if this method of culture is vigorously prosecuted a strong, hearty, productive forage plant is the result.

CUTWORMS DESTROYED.—Another proposition came before us, viz., the presence of cutworms in the alfalfa. It is known to many who raise alfalfa that there is a little dark green striped worm which does con-

siderable damage in alfalfa fields. This worm likewise spends the winter in chrysalis form beneath the surface of the ground, and the disk harrow will remove it if applied in the early spring after the frost is out of the ground.

THE POULTRY YARD.

Poultry for Fancy and Profit.

From a paper by A. D. BRADBEER at Norwalk Farmers' Institute.

Poultry raising is a business that any person can go into, from the keenest business man to the hap-hazard nonentity; but to start in the poultry industry and be successful requires the same amount of judgment or brain energy that it would to enter a mercantile or professional career. If I were called on to give advice in this matter, I should say, first, subscribe for one or two of the best poultry journals that can be procured; then study the conditions and characteristics of the different breeds of fowls, until you find your ideals either for eggs, broilers, or fancy stock, and if you are ready to make a purchase, don't be afraid of the price if the dealer should ask you \$5 or \$10 for a trio, or \$1.50 or \$2 per setting for eggs. If they are good they are better worth that price than to pay 50 cents for scrubs. By all means get thoroughbreds; then don't cross or mix them up. One man will spend several years in perfecting some noble strain of fowls, while others pride themselves on crossing or mixing them up. There are some men who cannot write their names but can always make a cross (x his mark). I have quite a number of his marks in my yard, but they are not profitable; will sell them this fall.

THE BREEDS.—I will not go into the full details of all the varieties of poultry, but will only summarize the merits of a few: As egg producers, I shall place the Minorcas at the head of the list, they being the largest of the non-setting varieties. The hen weighs from 5½ to 7 pounds and the cocks from 7 to 9 pounds. The next on the list are the Black Spanish and the Houdans. Following them are those glorious little egg machines, the Leghorns, of which there are seven or eight distinct species—the Buff, from the novelty of color, appears to take the lead. Now comes those two inimitable general purpose beauties—full-fledged citizens of the United States—the Plymouth Rocks and Wyandottes, of which there are several varieties of color: Barred, White and Buff Plymouth Rocks; Gold, Silver, White, Buff and Black Wyandottes. Although many attempts have been made to improve on them, they still remain the acme of perfection, laying a large number of eggs and are in good demand for the market. For winter layers and plenty of eggs, the Light Brahma and Langshan are on the upper perch. If you want birds for beauty, as well as perpetual laying, with highly illuminated plumage and symmetrical forms, buy the Golden Penciled Polish and Hamburgs; they are the most beautiful fowls in the world, and it is quite evident that the cross-mix-up man didn't have a hand in creating them.

WILL IT PAY?—Let us see if we will be justified by investing in poultry and providing suitable yards and buildings, and what we may depend on by way of financial returns: We will establish about the lowest standard, say, two eggs per week, valued at 1 cent each. This will give us \$1.04 per year. The hen can be fed at a cost of 50 cents. Just think it over. But with proper attention she will double that amount. Mr. Curry of Norwalk owns about 400 hens that cleared \$1.25 each last year, but remember they are not scrubs, or mongrels; all thoroughbreds, Brown and White Leghorns. Is there a demand for our eggs and poultry? Yes, and will be for several years. Last year about thirty-five carloads of eggs and a large amount of dressed poultry were brought into the Los Angeles market, and it is probable that this amount will be greatly increased for the coming year.

HOUSES AND YARDS.—If you have an acre of ground, if square, it will be 208½ feet on each side. You can divide it into thirty-two yards about 26x50 feet. Then put twenty hens in each yard and you will have 640 hens. Build a house 8x16 feet, 6 feet at the low side and 8 feet at the high; put three partitions in and you can comfortably house eighty hens. The one house will do for four yards. Have the high part face the south; leave the doors open in the day time and the sun will keep the inside dry and pure. Make the roosts 1x3 inches, laying them on the flat about 3 feet from the ground. About every three or four weeks saturate some sand or ashes with Lee's lice killer and sprinkle it on the roosts just before the hens retire; the fumes will permeate their whole bodies and keep them free from lice, and, as a California hen roost is "mitier" than the pen or sword, mites will be a thing of the past.

Keep plenty of gravel grits and provide an ample amount of shade and a supply of fresh water. Now, let the basis of your feed be green stuff cut up fine and mix with heavy bran. Let this be for the morning meal and wheat or corn for the afternoon, and success will be yours from the start.

INCUBATING.—If you want to have success raising

chickens use an incubator and brooder, but under no consideration should you put the incubator in a cellar, or any damp place. You should have plenty of fresh air. Experiment with two hens; set one in a cellar and the other in a barn. If the one in cellar hatches any chickens they will be weak and puny, about half of them will die and the remainder not be worth raising, while the one in the barn will bring off strong, vigorous birds.

Watch a hen during her period of incubation; then follow her example in manipulating the eggs. She will come off and feed once a day and remain away from the eggs about half an hour, and when she returns to the nest she carefully turns the eggs. Most incubator operators will reverse the hen's method entirely, by turning the eggs and putting them back immediately for fear the eggs will get cold. Now, you may expect the temperature in the incubator to get quite low, but don't be alarmed and alter the regulator or blaze, for it will soon get to the 103 mark again, and the eggs will not be injured. Remember that nature has made provision for the chilling of the eggs. When the hen comes off to feed, the temperature of her body is lowered several degrees and the feathers get cold, but she hatches her chickens just the same.

A Chapter on Chicks.

H. C. Gray gives the Petaluma Courier a chapter on chicks from which the following suggestive notes are taken: Chickens require no food for the first twenty-four hours, as the nourishment taken into the body just before leaving the shell is designed by nature to afford sustenance until the chick is able to run about. Keep the runs covered with coarse sand, or fine gravel, so the little chicks can appropriate a sufficient amount with which to fill their gizzards. As the yolk of the egg is the first food supplied by nature, it is fitting to continue it for a short time. Drop the yolk into hot water long enough to cook it, but not too hard, after which roll bread crumbs with it until the moisture is absorbed, making it a crumbling mass. Take a little of the preparation in the fingers, crumbling it, and let it drop before the chicks, and they, seeing the particles fall, will soon conceive the idea of picking them up. Thus the chicks are taught their first lesson. After the first couple of days, a variety may be commenced of such as dry, coarse oatmeal, cracked wheat, lean meat cooked and chopped fine, boiled potatoes, raw onions in small quantities. Aside from the good qualities of the breed, the chick is what the food it eats makes it. Oatmeal contains the elements necessary to the formation of bone, muscle and feathers in a greater degree than any other kind of food we know of. Give all the variety possible, but do not withhold oatmeal. It may be a little expensive, but it pays. Do not buy damaged grain or refuse feed of any kind for your growing chicks.

Do not neglect cleaning out the runs and brooder for two or three days, for the consequence of such neglect is that chickens will look as though they needed a doctor, and then you will wonder what is the matter with them. That one neglect will take more out of your pocket by stunting the chicks.

The best advice we can give to any one commencing to raise chicks artificially is to commence in a small way and increase the business as your experience increases and your success warrants. "Keep the chicks growing" should be your motto. Never should they retrograde. Many feed young chicks altogether too much. We do not advocate starvation, but insist that to feed well is to feed regularly six or eight times a day, and not too much at a time. Bountiful feeding doesn't make the chick, but a regular, sound, spare diet does. Feed only when they will run after it, and not at all if they seem careless about it. Keep them with a ready appetite and keep them well. The crop of a three-weeks-old chick holds less than a teaspoonful, and gorging means disarrangement of all their organs, diarrhoea and other minor ills, and points to overfeeding.

Keep plenty of pure, fresh water constantly before them. Chicks drink a little at a time, but they drink often. After they once learn to drink it will not do to allow them to be without water, for if such be the case, on receiving a fresh supply they will rush to it and not only wet each other, but will drink so much as to work serious results. Drinking and food vessels should not be old tins that have lain about the yard, and perhaps been used for diseased fowls to feed from the preceding season, and should be kept clean by frequent washing.

The greatest barriers to success, after improper mating of fowls, are, in our judgment, first, poor feeding; second, impure water; third, bad quarters, and fourth, vermin. Leg weakness is many times attributed to too high feeding, thereby increasing weight of the body out of proportion to the development of the muscles of the legs.

Bad fledging is caused by too close confinement or constitutional weakness of the birds. In the latter case, give the chick warmth, stimulating feed, and keep him out of the wet and rain.

Drooping wings are many times caused by vermin. In our estimation fully one-half the loss of small chick-

ens in California is caused by vermin, and, while not a disease, it is of no small importance. The only remedy is the strictest cleanliness of quarters, frequent whitewashing, and dusting the chicks often with powders.

Experiments in Poultry Feeding.

Vacation experiments with barnyard fowl are being carried on in the agricultural department of the University of California. The dietetic value of the various kinds of grain and corn fed to the chickens is being tested. Several Brown Leghorns are confined in separate coops to determine the difference in digestibility and assimilation of the various kinds of feed. The experiments are being made under the direction of Prof. M. E. Jaffa, who has charge of the laboratory of agricultural chemistry at the University.

"It is surprising," said Prof. Jaffa to-day, "how little attention has been paid to this subject. The relative value of the various feeds of the cow, sheep and horse have been investigated, but of those of the chicken little is known, though in many States the annual income derived from the poultry industry amounts to hundreds of thousands of dollars. Although experiments on chickens in confinement must result differently from those made on chickens in the natural state, the conditions preserved here are uniform and the results are thus comparable."

As soon as all the commoner kinds of chicken feed have been investigated experiments will be begun in caponizing and in the fattening of capons in order to determine the easiest and most economical methods.

THE APIARY.

Honey Interests of the San Joaquin.

W. H. Gilstrap prepares for the Tulare Times an excellent review of the growing honey interests of the upper regions of the San Joaquin valley. While bees have been kept—or permitted to keep themselves—in this valley ever since it was first settled in the "fifties," it is only during the past few years that any practical methods have been employed by the owners of bees. Many owners of bees continue to use the most primitive methods in their care, using the old "hive" or box, and permitting the bees to swarm at pleasure and await on some convenient bush the nail keg or box that is utilized for their future home.

STATISTICAL.—There are some progressive bee keepers in this locality, however, who make use of the best improved methods in the care of their bees. These apiarists have found the industry very profitable. They have organized the county association in nearly every county in this valley, with the Central California Association, representing the entire valley. There are about thirty-five bee keepers in the Tulare county association, who own about 12,000 colonies of bees in the aggregate. Some of these gentlemen own as many as 400 colonies of bees each. The honey produced in 1899 by bees owned by members of the association amounted to over eleven carloads, or 264,000 pounds. The hive known as the Standard is used by most of the practical bee keepers in the county. The greater portion of the honey is extracted from the comb before preparing it for market. The price obtained for the last honey crop was 6 cents per pound, being a much better price than was obtained prior to the organization of the association. The sales are made through the association, and we are informed that better results can be secured by purchasing supplies through the same source.

BEE FORAGE.—Alfalfa is the principal source of supply for the honey produced in this section, though large quantities of honey are secured from the fruit blossoms. The latter is not of as good quality, but being procured early in the season answers the purpose of feed for bees during the swarming season. This flow of honey commences the latter part of February and continues until the alfalfa blooms, about June 1st, and continues until October. The bees are wintered in the open and do not require any other protection than that given by the hives, thus saving the expense and risk met with in such localities as require the bees to be stored in buildings or cellars to prevent freezing.

It is no uncommon thing for one colony of bees to produce 200 pounds of fine honey during one season. Mr. Richard Hyde of Visalia secured \$25 worth of honey from two colonies of bees last season. He owns about 200 colonies, and finds the business produces very satisfactory profits.

There is seldom any disease or other enemy of the bee to contend with in this locality. Three years ago "foul brood" was discovered in some of the apiaries of this county. The Supervisors, at the request of the Bee Keepers' Association, appointed J. Gregg of Visalia bee inspector, and through his energy the disease was soon eradicated. He found and destroyed the first year twenty-six colonies of bees that were affected by "foul brood," two the second year and none during the past year. There is no other disease among the bees of this valley.

Agricultural Review.

ALAMEDA.

WILL MANUFACTURE TWINE.—Oakland, May 21: Articles of incorporation were filed to-day by the California Flax Mills, with a capital stock of \$10,000. The following directors have subscribed to the stock: Jno. Rutherford, \$5000; Wm. Rutherford, \$2000; J. Y. Millinger, \$500. The corporation will manufacture twine.

CROP PROSPECTS.—Haywards Journal, May 26: The Hunt Bros. cannery put up their first pack Wednesday. Everything was in first-class running order, and by next week the cannery will be running on full time and a large force employed. Their first pack consisted of several varieties of cherries. Hay cutting is in full blast. Grain cutting will soon commence. Barley will be short, while oats will be up to the average. The fruit crop throughout the hills and canyon will be heavy, especially prunes and apricots, while Bartlett pears and many kinds of apples will be fair.

CANNERY ITEMS.—Oakland Enquirer, May 25: From the present outlook the canneries will do a good business this year, and there will be abundant employment during the summer for those who care to work. The plant of the California Fruit Preserving Company (formerly the R. Hickmott Canning Company) is to be closed this year, and the large buildings are to be used as a warehouse by the Oakland Preserving Co. These two canneries are members of the California Canners Association. At the F. B. Hood cannery at Emeryville many improvements have been made during the past few months and a larger force employed than last year.

BUTTE.

FRUIT PITTING MACHINE.—Chico Enterprise, May 23: E. T. Reynolds has a fruit-cutting machine, which cuts the fruit entirely round and it is claimed will pit it more uniformly than can be done by hand. One man turns the crank and feeds the machine. Six pits are extracted at each turn of the wheel, and it is said it will pit one ton of apricots per hour. It does not push the pit through the fruit, but the pit is held and the fruit removed without being bruised in the least.

HEAVY CHERRY PACK.—Chico Enterprise, May 24: The Chico cannery is being run to its fullest capacity on cherries, and it promises to put out a very large amount of fruit. On cherries alone the output will be something like 15,000 cases. This will be the largest pack of cherries ever attempted at the cannery. As to the later fruits, the capacity of the cannery will be increased very materially, and before the opening of the peach season it is expected that the capacity of the cannery will be increased about one-half. There are now some 250 hands at work on cherries.

FRESNO.

VALENCIA ORANGES.—Sanger Herald, May 19: Valencia oranges are now being picked in the groves at Orangedale. The acreage of late fruit is small, so that only a few hundred boxes of Valentias will be shipped this month. We understand that some of the Fresno fruit dealers are paying \$1 per box on the trees.

HAY BALING.—Hay baling crews now operating in this section are asking \$1.75 per ton. Since last season wire has advanced to 6c per pound. About 40 cents' worth of wire is required to bale a ton of hay. Last season wire was down to 4½c per pound. Labor is also higher this year, and accounts to some extent for the sharp advance in hay baling.

PACKERS INCORPORATING.—Fresno Republican, May 24: The packers have completed their draft of the articles of incorporation of the packers' association, and the articles will be sent to Sacramento in a few days. The seeding arrangement, so far as the individual seeders' agreement is concerned, has been completed and will be a success. There are some questions of royalty that still have to be settled among the seeders.

HUMBOLDT.

CREAMERY PRICES.—The following prices were paid for butter fat on the 15th inst.: Arcata Creameries Nos. 1 and 2 and Harpst & Spring, 17½; Minor, 17½; Silva, 18. The creameries in Eel River valley paid as follows: Cold Springs, 18½; Humboldt, 18; Diamond Springs, 18; Independent, 19; Grizzly Bluff, 18½; Eel River, 18½; Excelsior, twenty-four days 18, six days 19; Red Poll, 18; Loleta, 18; Fernald, 18½; Crown, 18½; Anderson, 18½; Friel, 18½; Capital, 18½; Abramsons, 18½; Cream Valley, 18½; Hydenville, 17.

KINGS.

EARLY APRICOTS.—Hanford Journal, May 22: The first apricots in any quantity shipped out of this county went last Sunday. As usual, the Kwong On Wo Co. of Armona made the first shipment, it be-

ing some twenty boxes shipped to Los Angeles.

LASSEN.

CREAMERY REPORT.—Susanville Mail: The report of the Diamond Mountain Creamery shows that the company has just closed a successful year. During the year the sum of \$11,143.87 was distributed among the patrons of the institution, being a net price of 16½ cents per pound for all butter manufactured. We consider this a very good showing, when the distance to market is considered.

PLACER.

EARLY FRUIT.—Newcastle News, May 23: The first apricots of the season came in on the 18th inst. The lot consisted of three crates of the Newcastle early variety and were grown in the Columbian orchard. Last year the first 'cots came in on the 17th. Two boxes of peaches of the Sneed variety were brought into Schnabel Bros. & Co's fruit house the 19th inst. from Ira Avery's orchard. Schnabel Bros. & Co. sent them East in a carload of fruit Saturday.

SAN BENITO.

WILL HAVE A FAIR.—Hollister Bee, May 26: The directors of the Agricultural Association have definitely decided to hold a fair and stock show the week immediately following the San Jose fair.

SAN DIEGO.

COST OF WATER.—San Diego Union, May 24: The committee of property owners, which was appointed to confer with the flume company regarding the price of water for the present year, came to an agreement with the company yesterday, and the people of Lemon Grove will pay 8 cents per 1000 gallons of water if the same is pumped. If it is not pumped, the price will be at the contract rate on the property owners' agreement of purchase.

TOBACCO GROWERS' ASSOCIATION.—The San Diego Tobacco Growers' Association has been formed and elected the following directors: R. M. Powers, U. S. Grant, A. Sensenbrenner, Jas. McMullin, F. J. Henrichsen, Geo. M. Hawley and D. C. Collier. The company has secured 160 acres of land, suitable for the cultivation of tobacco. Work will be commenced at once—in fact, it has already been started to the extent of having some seed already in the ground, so that the tobacco plants may be soon ready for transplanting.

HONEY CROP PROSPECT.—Two months ago the bee men thought they would be fortunate if their bees would make enough honey to keep themselves alive until next season, but the whole situation is changed now. During the past two years of drouth the honey output has suffered with the other crops and there has been practically none marketed. The same outlook confronted the bee men a short time ago, but since the late rains sage is in the finest possible condition, buckwheat is flourishing and flowers and plants generally are in fine condition. A. H. Luscomb and J. F. Dehm, who have apiaries in the Bernardino section, visited their bee ranches and found honey making in full swing; the hives were full of honey and swarms were appearing. There were two supers in some of the hives, and both of these were full. White sage, one of the principal honey plants, is looking very fine, and the blossoms are so numerous that it is doubtful if the bees will be able to extract all the honey before they wither. The only doubt in the minds of the bee men is as to the length of the season. On account of the scarcity of earlier rains it is feared that it will not be as long as ordinarily, but while it does last there will be considerable honey made. The bee men are now dividing their colonies in order to prevent swarming. By dividing the swarms the number of hives can nearly be doubled and the yield will be greater.

SAN JOAQUIN.

HARE FANCIERS MEET.—Stockton Mail, May 25: At the last meeting of the San Joaquin Belgian Hare Association the constitution of the California Belgian Hare Club was adopted almost bodily. The membership fee was fixed at 50 cents, and the monthly dues at 25 cents. Meetings are to be held on the first and third evenings of each month. The election of officers resulted in the choice of J. W. Cavis, president; Dr. P. T. Turner, vice-president; B. E. Chappelow, secretary; E. E. Gross, treasurer, and M. J. Gardner, Frank Adams and Rev. S. J. Nunn, directors. The officers will serve until the annual election next January. J. M. Williams, J. F. Hoerl and M. J. Gardner were appointed a standing committee on programme.

SAN MATEO.

LARGE SUM FOR PREMIUMS.—S. F. Chronicle, May 27: The management of the San Francisco and San Mateo Agricultural Association has issued a circular outlining the proposed fair and live stock exhibit to be held at Tanforan park from

September 24th to October 6th. The premium list will contain cash awards of \$20,000 for the following class of live stock: Horses of all types, cattle, swine, sheep, Angora goats, poultry, pigeons, birds and Belgian hares.

SANTA BARBARA.

WILL SELL WALNUTS.—Santa Barbara Press, May 24: The directors of the Santa Barbara County Walnut Growers' Association met yesterday and decided to make J. K. Armsby & Co. of Chicago selling agents for this season's crop. Present indications are that the crop will be much lighter than last year. The rate to be paid will be fixed at a meeting of the Southern California Exchange later.

SANTA CLARA.

ORCHARD ITEMS.—San Jose Mercury, May 27: At Campbell the past week has been a busy one with orchardists. Irrigating, cultivating and thinning peaches and apricots have been diligently pursued up to the present time. Orchardists sometimes stop to figure on the probable value of their crops, but those who have good orchards do not worry, but expect to have their standard fruit pay them from \$100 to \$200 per acre. Some are anxious to know what the canneries are going to offer for apricots, but from what we can learn none will be sold for less than \$40 per ton, as they safely claim they will obtain that at least that much by drying the product, as many are preparing to do. Peaches will probably also bring satisfactory prices and will mostly be handled by the growers, who are learning it pays to handle their own product and prepare it for the market.

FRUIT UNION APPROVE PRUNE ASSOCIATION.—San Jose Mercury, May 29: A meeting of the Berryessa Fruit Union was held yesterday, and the following resolution was passed by a unanimous vote: "Resolved, That we approve of the changes in the packers' contract as recommended by the directors of the California Cured Fruit Association in the letter issued by them May 25th, and we recommend that every member of our union sign such letter and return it at once."

SANTA CRUZ.

BEET AND GRAIN CROPS.—Watsonville Pajaronian, May 24: The beet crop looks unusually well in this valley. There are a number of fine fields on the San Juan road, especially that of A. W. Scott, on the Regan farm, which is planted to beets for the first time. The grain crop is of fair promise, but the yield will not average as well as last year. Oats make the best showing, and the Springfield district is again a leader in a showing of good crops of black oats. A grain pest—a red louse which worked close to the roots—has shortened the crops of barley and wheat. There is such a heavy stock of old hay in warehouses and such good crops in several interior hay districts that it is not probable that a heavy acreage in this valley will be cut for hay.

GOOD PACKING NECESSARY.—A gentleman was in this city last week who, at times during the past winter, attended the sales of Pajaro valley apples at Covent Garden, London. He witnessed the thorough examination of boxes by the buyers before sale; the sides of the boxes were taken off, the apples unwrapped and the fruit closely examined. If the apples show poor grading or decay—in fact, if they are not up to a high standard—all of the boxes bearing the brand of the examined boxes are sold at shaded prices. One box of bad apples spoils the sale of an entire shipment. Then there is a guarantee of quality with each sale, and if the dealers who buy at auction or from jobbers find that the apples are not up to the sample boxes shown, they return their purchases to the auction firm, and the latter has to refund the money paid. Apples are sold in Great Britain for what they are, and they have to be the best to bring good prices. If we are to retain the English market for our apples the greatest care possible must be taken in grading and packing. It is of the utmost interest to orchardists and packers to see that it is done.

SOLANO.

CREAMERY BUSINESS.—Dixon Tribune, May 25: The patrons of Dixon Creamery received the second month's distribution of proceeds on the 15th. The amount was \$570. The creamery handled during the month of April 106,163 pounds of milk, from which 4000 pounds of butter were made, showing an average test of a trifle over 3½ pounds of butter to 100 pounds of milk.

SUTTER.

INJURED BY RUST.—Marysville Appeal: A well-known rancher remarked yesterday that not over one-half the usual wheat acreage had been sown in the county and that of this nearly half was in poor condition. He said that the early sowing was in good shape, but that the late had

been injured very much by rust. It is expected that several harvesters will begin operations by the 30th on barley, much of which is now ripe and ready to cut.

NEW CREAMERY.—Yuba City Independent, May 25: Grimes & Webb have a force of men at work building the creamery at Vernon. The main building will be two stories, 30 feet wide and 60 feet long. The engine room is one story and attached to the east side of the building. The lower story will be used for the creamery, while the upper story will be fitted up as a dwelling for Mr. Webb and family. The creamery plant will consist of a 25 H. P. boiler, in connection with a 20 H. P. engine, two separators with a capacity of 6000 pounds of milk per hour, churns, etc., and a No. 1 Armstrong ice machine which will furnish cold storage. Only the highest grade machinery will be installed, and the total cost is estimated at \$8000.

CHANGE OF MANAGEMENT.—TO THE EDITOR: The Sutter Canning & Packing Co. of Yuba City has discontinued, and the establishment is now managed by Hunt Bros. & Co. The latter firm has an establishment of about the same capacity at Haywards, Alameda county. The canning plant, described in the PACIFIC RURAL PRESS of the 12th inst., which was recently installed at Haywards, is a duplicate of the plant which has been operated at Yuba City for the past four or five years. At Yuba City it is expected Hunt Bros. & Co. will employ 700 to 800 people during the busy season, working mainly on peaches and pears, but canning also apricots, plums, grapes, etc.

TEHAMA.

CHOICE BUCKS.—Red Bluff News, May 23: C. J. Gooch has received four registered thoroughbred French Merino bucks. Mr. Gooch purchased them from J. H. Glade of Sacramento, paying \$75 per head.

MONSTER OAKS.—Red Bluff Cause, May 26: W. B. Elam felled a gigantic oak. This tree yielded 46½ tiers of wood and 236 posts. Placing the value of the wood at \$2 per tier, it yielded \$103; the 236 posts, at 8 cents a piece, would be worth \$18.88, which would make the total value of the tree after it was worked up \$121.80. It was a noble specimen of the oak family, and Mr. Elam says there are many others like it in the Hunter district.

CUTTING AND PITTING MACHINE.—Red Bluff Cause: Isaac Coats, the Antelope fruit grower, anticipates a scarcity of help in the orchards this season and has purchased a cutting and pitting machine which will do the work of sixteen men. The machine cost \$150, and he estimates the work that it will do, if it had to be done by hand, would cost \$300.

FINE SHEEP.—Red Bluff News: James M. Howell, the prominent Henleyville farmer and stock raiser, has returned from a business trip to the East. In New York he purchased twenty-one choice registered Spanish Merino bucks from the two great breeding farms of Cossett & Lusk. Stockmen of this county have been making great strides in the past two years in improving their stock, and, with the others, Mr. Howell is to be commended for bringing such valuable sheep into the county.

ALMOND CROP SOLD.—Red Bluff News, May 24: Purchasers have been quietly buying up the almond crop, paying about 9 cents, and nearly all the orchardists have sold their crops. The price is slightly less than that of last year. The crop is a fair one and of excellent quality.

VENTURA.

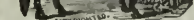
WILL UTILIZE BEET PULP.—Ventura, May 27: Official announcement is made that the American Beet Sugar Company will establish near Oxnard mammoth stock-feeding yards. It will erect buildings for the accommodation of the necessary force of men to handle from 3000 to 5000 head of stock. Silos will be built, so as to use the beet pulp during the entire year. In this connection it is also contemplated establishing an extensive creamery plant.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure



The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

Each in All.

Little thinks, in the field, yon red-cloaked clown,
On thee, from the hilltop looking down;
And the heifer that lows on the upland farm,
Far heard, lows not thine ear to charm;
The sexton, tolling the bell at noon,
Dreams not that great Napoleon
Stops his horse and lists with delight,
As his files sweep round yon distant height;
Nor knowest thou what argument
Thy life to thy neighbor's creed hath lent;
All are needed by each one—
Nothing is fair or good alone.

I caught the linnet's note from Heaven,
Singing, at dawn, on the alder bough,
I brought him in his nest at even;
He sings the song; but it pleases not now;
For I did not bring home the river and shy;
He sang to my ear—they sang to my eye.

The delicate shell lay on the shore;
The bubbles of the latest wave
Fresh pearls to their emerald gave;
And the bellowing of the savage sea
Greeted their safe escape to me.
I wiped away the weeds and foam
And fetched my sea-born treasures home;
But the poor, unsightly, noisome things
Had left their beauty on the shore,
With the sun, and the sand, and the wild uproar,
Nor rose, nor stream, nor bird is fair;
Their concord is beyond compare.

—Ralph Waldo Emerson.

The Gentleman in Khaki.

"This war will prove a more sanguinary business than people suspect, and Britain will see many crushed hearts and broken homes before her flag shall wave above the public buildings of Pretoria."

The pretty typewriter tapped off the florid peroration with tight-set lips, and, at the end rose with a sigh, her day's work finished, and prepared for her walk home. The troubled look gradually faded as she tripped lightly along the street, and many a look of admiration was bestowed upon her winsome, girlish form. A private soldier coming toward her thought he had never seen a more beautiful picture, and, with the thought, a pang went through his heart.

"I was looking for you," she said, as they met; "somehow I felt that you would come to-night."

"Did you?" he said, with a pleased look.

"Hello, my gallant feller!" said a loud voice. "You're one of the lads we're proud of! Have a cigar with me—take two or three—and give us a shake of your hand."

"Thank you," said the soldier, coldly; "I'm not in the habit of shaking hands with people I don't know, and I buy my own cigars."

He passed on with his companion, leaving the man gasping with amazement.

"It makes me mad," exclaimed the soldier, "to see how, since this war began, every civilian thinks he has a right to clap us on the back and offer us his charity, because we happen to wear the Queen's uniform."

The girl looked anxiously into his face as they turned into a house in a quiet street and entered a cosy sitting-room.

"Maurice," she said, "something has upset you. What has happened?"

"The worst!" he answered, pressing her closely to him. "Bear up, little wife. It is only what we knew must come. The regiment starts for South Africa to-morrow week."

"Oh, my love! my love!" she cried, throwing her arms around his neck and sobbing on his breast; how shall I live through your absence?"

"Oh, my beloved!" he exclaimed, kissing her tear-stained face. "I have done you dreadful wrong. I see now what madness it was for me to persuade you to marry me, Winnie."

"Hush—hush," she said, putting her hand over his mouth, "you must not

speak like that. Whatever the future may have in store for us, you have made the last six months so full of happiness for me that I shall feel I have had my share of joys if I never should know another. Don't go away thinking that you ever brought anything but sweetness and happiness into my life."

"God bless you, little woman," he said, huskily; "you give me strength and courage."

"And you don't regret our marriage now?" she asked, anxiously.

"Regret?" he said, holding her to him; "not now, nor ever!"

"Are you sure, Maurice, that deep down in your heart there is not the tiniest feeling of doubt that you made a mistake when you broke with your mother, renounced all hope of ever inheriting any of her fortune, and became a private soldier, all for me?"

"There's not the tiniest fraction of an atom of doubt for myself," he said, "and since you tell me that you are content, I am certain that, in spite of all it cost, my marriage with you was the best day's work I ever did."

"You will write to your mother now," she said. "You will let her know that you are ordered to the front?"

"I should like to, but she made it impossible. She forbade me ever to write to her, threatening to return my letters unopened. No, I shall not write to her."

"I wish you would," she said, pressing closer to his side. "I have thought that you might have been more gentle with her than you were at the time of your difference. It is natural that a mother should be ambitious for her son." She laid her cheek against his and went on very softly: "None but a mother can read a mother's heart."

"You may be right," he said. "I will try to write, and if I come back—"

"Oh! Maurice," she cried, "you must come back to us!"

"Us?"

"Yes; us!" she said, burying her face on his breast. "When you come back there will be another here to welcome you!"

"Winnie!" he exclaimed, holding her away that he might look into her face; "Winnie! you don't mean that? It was hard enough to go before; how can I leave you now?" He sank into a chair and covered his face with his hands.

"You musn't think that," she said, kneeling at his feet. Drawing his hands from his face, she slipped earessingly into his arms. "It will give me strength and courage to bear your absence. However black the sky, however threatening the future may appear, I shall always feel that whatever happens, while our child is spared fate can never take you from me altogether."

"My darling wife!" he exclaimed, kissing her fondly. "My good angel always!"

The regiment had marched through streets lined by a cheering multitude, the last "Good-by's" had been spoken on the station platform, and the train, moving slowly off, had been gradually lost to sight in the distance. Maurice Livingstone had gone to fight in his country's cause. Winnie remained behind, with tear-washed face and grief-gripped heart, to hope, and pray, and work.

Work—she must, and that necessity was her salvation. Even if her husband had remained with her, the time before her would have been a severe strain upon their scanty resources; now, alone, she felt that she must do all in her power to make her preparations as complete as possible. And so she did her typewriting, and evenings made wonderful little garments which she often kissed, and more often cried over, and practiced little economies, every one of which, though it robbed her of some personal comfort, filled her with delight, as she reflected that it would help to smooth the baby path of her child.

Bitterly as she sorrowed at his going, she was proud to know that he went boldly and gladly to face his country's foes, and she had forced herself to bear up through their parting, because she

wished him always, when going into danger, to do so with as light heart and as strong hopefulness as might be.

But now he was gone the reaction came, and if it had not been for her work and the great glad wonder that the future held she must have given way. That kept her, and served, too, to make her think of Maurice's mother, and try to imagine what her feelings must be when she thought of her boy. The result of these reflections was that Winnie sent a typed intimation, undated and unsigned, simply informing Lady Margaret Livingstone that her son had sailed for South Africa, with the name of his regiment and the transport on which he was gone.

So, in work and hope, she saw the days grow into weeks and the weeks lengthen into months, yet there was no news to fill her with immediate dread for her husband. Then it came suddenly. General Buller was concentrating his force to attack the enemy at Colenso and cross the Tugela to make his way to the relief of Ladysmith. Maurice's regiment was with Buller's force, and the great battle might take place at any moment.

With anxious eyes she scanned the papers morning and evening, looking for the tidings she dreaded to see. At last it was there. The battle of Colenso had been fought and the English repulsed with heavy casualties. His regiment had been in the thick of the hurricane of lead which raged about the afterwards abandoned guns.

Heroes were plentiful that day. Man after man made the dash across the open ground which spinned as bullet and shell cut into it; man after man dropped from his horse as some of the projectiles found their mark. It was a sheer impossibility to bring in the two field batteries across the death-strewn ground, but volunteers sprung forward, and the only difficulty was to keep men from throwing their lives away in useless numbers.

Again the attempt was made. Three men dashed forward, urging their horses at topmost speed. On went the three through whistling bullets and shrieking shells—on, till a shell, striking a horse, exploded, blowing steed and rider into fragments; and still on—only two of them now—and it seemed that nothing but a miracle could have taken them so far. The odds were too great against them. The horse of the lieutenant pitched forward on its head, throwing its rider several yards away, and almost at the same instant that ridden by the other man reared high and fell dead.

Quick as lightning the soldier had thrown his right leg over the horse's back, and as he came down he sprang clear and ran at once to the fallen officer.

"Have they hit you?" he asked, sharply.

"No. The fall knocked me silly, but I'm all right now."

"Then come on!" said the private, helping him to his feet. "We must get out of this. You could sprint a bit at Eton; show what you can do now."

Officer and private started for their lines, racing back over the ground they had so lately crossed with Mausers spewing bullets after them like a spray from a giant hose. Yet it seemed destined they should live. Bullets slipped through their clothes and chipped skin from their limbs, but they still lived; they still ran.

Side by side they raced for a kopje that promised shelter, their eyes hard set, their breath coming thick and short; hope helping now, for surely having gone so far they must win the rest, when a white, drawn face rose up before them, and a feeble, husky voice said:

"For God's sake, give me a drink of water!"

With a common motive of comradeship they halted before the fallen man and felt for their water bottles.

"Mine's gone!" said the lieutenant. "I must have lost it when I took that header."

"Mine is empty—split by a bullet," said the other.

They looked at each other for an in-

stant. A bullet took a button off the officer's shoulder.

"Let's take him with

They picked the poor fellow up—his legs had been shattered and his coat blown to tatters by a shell—and hurried along. They reached the foot of the kopje, and started up its side. Comparative safety was almost assured, when the officer cried out:

"Hold him tight! I'm hit!"

The private threw his arms around the wounded man and held him as the lieutenant fell on his hands and knees.

"Get him up if you can," said the lieutenant. "I think they've broken my ankle, but I can crawl."

With his battered comrade in his arms the private pressed on—up to the summit and down into the donga where was safety if they kept their heads below the crest of the hill. He put his burden down. A dead soldier lay on his face close by, his water bottle still on his back. The private gave it to his comrade.

"How do you feel now?" he asked.

"Cold!" The wounded man shivered. The other wrapped his almost naked body in his own coat.

"Can I do anything else?"

"Smoke." The word was murmured feebly.

"When I come back," said the other. Then, turning, he seemed to brace himself up as though with an effort, and dashed down the side of the kopje to where the lieutenant was painfully dragging himself along.

"Get back to cover at once!" cried the officer.

"Not without you, lieutenant!" was the reply, and he put an arm around the officer to raise him.

"Who are you?" asked the lieutenant.

"Maurice Livingstone."

"By Jingo! so you are. Dirt and whiskers have disguised you, but I know you now." He submitted to being helped up the hill. You're a brick, Maurice, as you always were. We're at the top—we're safe! Good God!"

At the very moment when they had only to throw themselves down behind the ridge to be secure from Boer bullets, Livingstone sprang into the air with a cry, and pitched into the donga in a crumpled heap.

At last. The list of casualties at Tugela river were posted at the War Office, and the crowds of anxious inquirers were reaping joy or sorrow as they pressed about the boards, and found or failed to find the names of their loved ones.

A carriage drew up, and as the footman opened the door a white-haired lady stepped out and entered the lobby where the lists of losses among rank and file were shown.

"It's Lady Margaret Livingstone," whispered a man as she passed.

She went on, unheeding the throng. The lists were momentarily forsaken as she approached them by all save a pale, sweet-faced girl, who scanned them with frightened, swimming eyes, thoughtless of everything save the hopes and fears which wrestled with each other in her heart.

Together the two women looked down the lists; together their eyes lighted on one line.

"Z 0973, Pte. Maurice Livingstone, killed."

As a black mist rose before the elder woman's eyes the girl beside her murmured:

"Maurice! Oh, Maurice!" and sank fainting at her feet.

An instant Lady Margaret looked down at the girl, while the instinct of love arose in her breast. Then she knelt, and raised her son's wife in her arms. Love had conquered.

Three days later Lady Livingstone drew the physician who attended her family into her drawing-room, and looked a silent question into his eyes. It was a softened, tender and motherly face he saw as he shook his head sadly.

"She cannot rally," he said gently. "She tries for the child's sake; it is pitiful to see how hard she tries, but she can't do it. If we could only rouse her—" He turned away. The pathos of the scene he had just left was strong

upon him. "The latest edition," he said, picking up an evening paper from the table; "may I look at it?"

"Certainly," she answered. "I have interests out there," he said, opening the paper and glancing through it. Suddenly he waved the paper above his head. "She's saved!" he cried, with almost boyish enthusiasm; "and there's joy for you. See!"

She looked where he pointed. The paragraph was headed, "Corrections of Casualty List." She saw only one line—

"Z 0973 Pte. Maurice Livingstone (reported killed), wounded severely."

"Thank God!" she said, upon her knees.

"It must be broken gently to her," the doctor said.

"Trust me," she answered, with a tender smile. "I will be very gentle."

Gentle, indeed, she was, and it was with a soft hand and still softer lines upon her face that she tended Winnie, and brought her out of danger.

When Maurice returns—as he will, for the bullet, though it pierced his lung, made a passage that will easily heal—it will be to receive a loving welcome from his mother, wife and—though this person will, perhaps, be a little shy at first—his son. Then they will learn that it was through his generosity in wrapping his coat round his dying comrade that his name appeared among the dead. And they will be proud to know that he is recommended for the Victoria Cross.

Home Building.

Many young people do not realize the importance of a home in beginning their married life. They say "It's too much trouble to keep house; we want to enjoy life for a while," so they settle down in some boarding-house and seek pleasure and entertainment at parties, theaters, etc., until they constantly crave something of that kind, and find no pleasure in quiet home joys which might afford the highest pleasure. Happily, this view is not common among young people in the country, but there is another thing to urge—have a home by yourselves. You do not know how much of your happiness may depend on this. The first years of married life are trying ones. No matter how long you have been acquainted, there are still many things to learn; and this period, when your lives are being turned and harmonized to each other, if passed with each other, is passed with much less discord if you are at home to yourselves.

It ought to be the aim of all young married people to build for themselves a home, be it ever so humble, and then to make it as beautiful as possible. It is something for which to work and sacrifice, and will be loved and valued according to the effort cost to obtain it. Every vine, flower or tree that is planted is an added pleasure. The children that come into such a home, and which they are easily taught to help care for and beautify, will be more unselfish and more likely to grow into strong and noble men and women.

Making Over Blankets.

One of the duties of the housekeeper when blossoming trees assure her that settled spring weather has come is washing the blankets. Perhaps she may find it also of advantage to make them over, according to this plan:

New blankets generally come in pairs, folded over at the bottom, and the two upper ends generally bound with ribbon. Some housekeepers cover this ribbon, binding with a fold of cotton, which can be ripped off when it is soiled, and another basted on in its place. This, however, is only a temporary device. As soon as the blankets are washed the border must be replaced, as ribbon ordinarily will not bear washing.

After bed blankets have been in use two seasons they should be washed, no matter how neat they look. They have by this time absorbed enough of those unwholesome fumes thrown out in sleep to need disinfecting in some way, and

the best way is by washing them. Cut them apart at the fold and rip off the ribbon binding. This makes two single blankets, which are much easier to handle in washing than a pair.

Wash the blankets by themselves on a clear, cool, sunny day, when the air is still. After sousing the blankets fifteen minutes in soapsuds made with white soap and about a tablespoonful of ammonia to every gallon of water, lift them out into a new "suds" a trifle cooler, and souse them again for five minutes. In the next water omit the soap but put in ammonia. Wring them through a wringer screwed up as loosely as possible. If you have only a small wringer, it is better to press out the water with the hands, as tight wringing is very injurious to the soft texture of blankets.

Hang the blankets while still quite wet evenly on the lines. It is better to stretch the lower edge on an even strip of wood the size of the blankets before they were washed, and pull them to the same length on the line. Let them hang until they seem dry, then hang them in a warm kitchen overnight. When they are dry finish both ends of each of the blankets in blanket stitch. This should be done with an ordinary size worsted needle with a sharp point, and German-town yarn the color of the stripes in the blanket.

John G. Whittier.

O thou, whose daily life anticipates
The life to come, and in whose thought
and word
The spiritual world predominates.
Hermit of Amesbury! thou, too, hast
heard
Voices and melodies from beyond the gates,
And speakest only when thy soul is
stirred! —Longfellow.

DOMESTIC ECONOMY.

Salad and Salad Making.

One secret of salad making is the judicious employment of oil so as to correct the acrid juices of the plants and yet preserve their several flavors unimpaired. The nutritive value of salads is so well known in Europe that there is never a dinner or supper without some succulent herb to "sharpen with cloyless sauce the appetite." This nutritive value is due to the potash salts, which, though present in vegetables in general, are eliminated in the process of cooking. Besides lettuce, celery and the cucumber, we have common mustard and watercresses that are very valuable not only for their wholesomeness, but also their exquisite flavors. A housekeeper who has the nutrition of the family at heart and has conquered the salad question can add a desirable dish to the plainest dinner. She can feed the hungry, stimulate the jaded appetite and satisfy the caprice of the gourmet with these delicate treats. A salad is agreeable and healthful to eat; it is also an economical and democratic dish, and not merely a dish for the fashionable world. Of all the methods of seasoning a salad the simple, so-called French dressing is the most delicate, the most satisfying to an epicure and the most hygienic of all.

After having thoroughly washed the salad, dry it by shaking or even wipe it with a cloth. The reason for this is whenever there is any water left on the leaves the oil and vinegar will not cling to it. After this operation arrange the leaves loosely in a salad bowl—once and a half as large as the bulk of salad, so there will be plenty of room to turn it again and again with the wooden fork and spoon in the process of seasoning. Now, as to the French dressing, put salt and pepper into the spoon and a little vinegar or lemon juice, and stir with the fork until the salt is dissolved and the pepper is well mixed, and then sprinkle this mixture over the salad and turn the leaves thoroughly. Finally measure out so many spoonfuls of oil and blend it again and the salad is ready to be eaten. To give flavor to salads you can use small, fine herbs that are in season and can be easily grown in the garden or flower pots, such as chervil, chives, tarragon, pim-

pernel, balm, mint and parsley. In the spring all these herbs may be combined and eaten as a salad by themselves. The French call this combination vendome.

Domestic Hints.

INDIAN CRUMPETS.—These may be recommended as a breakfast bread. Just before bedtime heat two cupfuls of milk to scalding and pour it gradually upon two cupfuls of corn meal. When thoroughly mixed, stir this into a tablespoonful of granulated sugar and a quarter of a yeast cake dissolved in a little warm milk. Cover the bowl with a clean cloth and set to rise. Early in the morning add a tablespoonful of melted shortening and beat hard for a moment before pouring the batter into muffin tins. Set near the range for twenty minutes and bake.

HOT POCKETBOOKS.—One pint of sweet milk brought to a boiling point, to which add one tablespoonful of sugar, half a teaspoonful of salt and butter the size of an egg; let cool till lukewarm, then add half a cake of yeast, two eggs and a quart of flour. Let the dough rise in a warm place until very light, then pat down with the hand and let rise again; roll out to about five-eighths of an inch thick, cut in four-inch circles, brush with melted butter and fold over; let rise on tins. Bake until a delicate brown; then, while warm, go over the surface with melted butter to make the crust tender.

LEMON SOLIEL.—Soak a packet of gelatine in half a pint of milk, then take three-quarters of a pound of sugar, throwing each lump, after being well rubbed, into a saucepan, with one and one-half pints of milk. Stand this on the stove till hot, but do not allow it to boil; then put in the gelatine and stir until dissolved. Put all into a large basin and stir until the mixture is about the warmth of cow's milk. Take the strained juice of the lemons and throw into it. Give one or two stirs (not more, and very quickly) and put at once into a mould. If properly made, the bottom of the mould should look like a cream and the top like jelly.

BAKED TOMATOES WITH EGGS.—Wash some medium-sized tomatoes, cut a small slice from top, scoop out the inside with a spoon and season the tomatoes with pepper and salt, put one-quarter teaspoonful butter into each one, set them in a buttered pan, and bake in a hot oven ten minutes; remove and put into each one a raw egg, sprinkle over a pinch of salt and a few drops of melted butter, return the tomatoes to the oven and bake till the white of egg is firm; cut as many slices of bread as you have tomatoes, toast them to a fine golden color and spread with butter, lay the toast on a hot dish and place one tomato onto each piece.

SALISBURY STEAK.—Procure two pounds of beef from the upper round, free from fat and strings; put it twice through the meat machine, then form it into six round balls, flatten them to half-inch in thickness, brush the cakes over with cold water and pat them a little with the knife to have them nice and smooth; then brush each all over with melted butter or oil; lay them on a hot broiler, cook them over a clear and not too hot a fire for three minutes on each side; transfer the meat to a warm dish. Mix one tablespoonful of butter with one teaspoonful salt and one-quarter teaspoonful pepper; spread this over the meat equally divided on both sides. Garnish with a border of French fried potatoes and serve with tomato salad. In place of French fried potatoes, baked potatoes may be taken.

STUFFED CUCUMBERS.—Boiled or stuffed cucumbers make a pleasant change in the daily menu. Peel the cucumbers and boil them in salted water until tender. Make a white sauce the same as used for carrots. Place the well-drained cucumbers in the sauce to get heated through, then serve. Cucumbers to be stuffed should be cut lengthwise. With a spoon remove carefully the seeds, and fill the place with a stuffing made of equal parts of minced chicken and soft crumbs, seasoned and moistened with one egg and a little

stock. Place the pieces in a pan with enough stock to cover one-half inch deep. Cook in a moderate oven one hour, or until the cucumbers are tender. Remove them carefully to a hot dish. Thicken the gravy in the pan with a little corn starch and pour it around them.

Hints to Housekeepers.

Onions, potatoes and cabbages for soup should always be scalded before being used, to draw out indigestible qualities.

If the children have no appetite in the morning, don't allow them to start for school without first drinking a glass of hot milk.

To test the heat of the fat for croquettes, fish cutlets or fish balls, drop in a small piece of bread, and if it browns while forty can be counted, it is right.

If you wish to cool a room wet a cloth, the larger the better, and hang it up in the room. If the ventilation is good the temperature will sink 10% or 15% in less than an hour.

Sew a bit of thin chamois leather around the inside of a shoe heel if the heels are tender. It will prevent soreness, and also save the stockings. It is a very good plan with children's shoes.

Put a little lemon juice or vinegar in the kettle in which cauliflower or cabbage is boiled. It will serve to keep it white while cooking. It also whitens and keeps firm fish meat. Apropos of boiling cabbages, the cook of one family manages this process without the usual disagreeable smell coming from it. Her secret, she says, is in cooking the vegetable very slowly, practically stewing it, in fact, and keeping the pot covered.

Fruit, such as raisins, currants, etc., should not be washed just before using in cake, as, even when the cake is well done, the water, by softening the fruit, would cause it to be heavy and sink to the bottom. When the fruit is received pick over the raisins and currants, wash them, rub the currants in a coarse towel to dislodge the minute stems, and dry both thoroughly on tins. Leave the fruit in a warm place all day to make sure it is perfectly dry, and put it away in closely covered tin cans. When needed for baking the currants require only to be well floured and the raisins to be seeded and floured.

To polish and clean windows you must use the right utensils. Ordinary water, a mop and soap will hardly accomplish the purpose. Soap, to begin with, should always be avoided in window cleaning. The best of soaps will streak the glass and make it look worse than before. Even water can be dispensed with, or, if the windows are very dirty, wash them first with water and then with alcohol. Alcohol will give a polish and brightness to the glass that cannot be obtained in any other way. After the alcohol has been put on, rub and polish with a chamois. A piece of cotton cloth can be used for rubbing on the alcohol, but the polishing should always be done with a chamois. This is not an expensive method, for the windows will remain clean and polished nearly twice as long as when cleaned with water.

It is almost impossible to wash some varieties of rice free "from that which makes it stick." If to this kind one teaspoonful of butter is added in the cooking the grains, will separate. There are many ways of cooking rice, the most difficult of all vegetables to cook properly, but none is better than to drop it into rapidly boiling water slowly enough not to stop the boiling, where it must be kept fairly dancing until testing shows it is done. It must be watched, to catch it just at the right moment, otherwise the starch will be given off into the water. The moment the grain is soft throughout pour a little cold water into the pot to instantly arrest the boiling; then drain and stand on the back part of the stove (over a pan to catch the drippings) to dry. Neither Japanese nor Chinese rice compares with our Carolina rice, both being meager in size, dark and "sticky" when cooked.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, May 29, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	May.	July.
Wednesday.....	65 1/2 @ 66 1/4	66 1/2 @ 67 1/4
Thursday.....	66 1/2 @ 66 3/4	67 1/4 @ 67 3/4
Friday.....	66 1/2 @ 66 3/4	67 1/4 @ 66 3/4
Saturday.....	66 1/2 @ 66 3/4	67 1/4 @ 67 3/4
Monday.....	65 1/2 @ 65 3/4	67 1/4 @ 66 3/4
Tuesday.....	65 1/2 @ 66 1/4	66 1/2 @ 67 1/4

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday.....	5s 8 1/4d	—s—d
Thursday.....	—s—d	—s—d
Friday.....	5s 8 1/4d	5s 8d
Saturday.....	5s 8 1/4d	5s 7 1/2d
Monday.....	5s 8 1/4d	5s 7 1/2d
Tuesday.....	5s 8 1/4d	5s 8d

*Holiday.

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	May.	Dec.
Thursday.....	—@—	1 00% @ 1 00%
Friday.....	—@—	99 1/2% @ 99 1/2%
Saturday.....	—@—	99 @ 98 1/2%
Monday.....	90 @ —	98 1/2% @ 98 1/2%
Tuesday.....	—@—	98 1/2% @ 98 1/2%
Wednesday.....	—@—	—@—

WHEAT.

The market has been generally dull and uninteresting since last review, just the condition that the buying and bear interest would select to have the situation shape to their suiting. The crop in a considerable portion of the Middle West was reported to be unpromising from lack of moisture, but with very little foreign demand and not much local buying, there was no stimulation of values on account of the unfavorable crop news. In the local market, exporters have been lately doing practically nothing in the way of attempting to buy wheat, and that there will be any special improvement in this regard in the near future is not probable. There are few ships here, either engaged or disengaged, and the chances are that during the next few months, as is apt to be the case at harvest time, the needs of farmers who are not forehanded will throw more wheat upon the market than required for the foreign and local trade, making a poor time to sell, as buyers will be master of the situation to a more than ordinary degree. The speculative market at the close showed slight recovery, but spot market was unimproved.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

May, 1900, delivery, 90@—c.	
December, 1900, delivery, 98 1/2c @ \$1.00 1/2.	
Wednesday, at regular noon session of Call Board, May, 1900, wheat sold at —@—c; December, 1900, 98 1/2 @ 98 1/2c.	
California Milling.....	92 1/2 @ 97 1/2
Cal. No. 1 shipping, alongside.....	90 @ 92 1/2
Oregon Valley.....	90 @ 95
Walla Walla Blue Stem.....	95 @ 97 1/2
Walla Walla Club.....	85 @ 95
Off qualities wheat.....	82 1/2 @ 87 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	6s 3d @ 6s 5d	6s 1d @ 6s 2d
Freight rates.....	26 1/2 @ 27 1/2s	38 1/2 @ 40s
Local market.....	\$1 06 1/4 @ 1 08 1/2	90 @ 93 1/2c

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

While the market is weak, with tendency to lower figures, quotable values remain in same position as for some months past. There is considerable cutting of rates, however, especially where transfers of noteworthy magnitude are under consideration. There is a fair outward movement, but much of this flour is being delivered on contracts. Local demand is of a light order.

Superfine, lower grades.....	\$2 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

There has been further depression in values for this cereal, both in the spot and speculative markets. As the crop in California promises to be of tolerably heavy aggregate, outside of the extreme southern of the State, the buying element is

having good opportunity to hammer down prices and is not slow in taking advantage of the same. The market is not likely to develop strength very soon, at the same time much lower prices than now current are not looked for.

Feed, No. 1 to choice.....	70 @ 72 1/2
Feed, fair to good.....	67 1/2 @ 70
Brewing, No. 1 to choice.....	75 @ 85
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

Offerings of Whites and Grays were ahead of the immediate demand, causing the market for these varieties to incline against sellers, although quotable rates were without marked change. Reds and Blacks continued in fair request at the comparatively easy figures which have been current for some time past. Spot supplies of colored oats are not of heavy volume.

White Oats, fancy feed.....	1 22 1/2 @ 1 25
White, good to choice.....	1 12 1/2 @ 1 20
White, poor to fair.....	1 05 @ 1 10
Gray, common to choice.....	1 02 1/2 @ 1 12 1/2
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	95 @ 1 07 1/2
Red.....	95 @ 1 17 1/2

CORN.

The market is fairly supplied with Large Yellow, mostly imported product, for which asking rates remain close to figures previously quoted, but there is no particular firmness. Large White is being offered in greater quantity than immediate custom can be found for at current rates. Small Yellow remains scarce and under strong control.

Large White, good to choice.....	1 05 @ 1 07 1/2
Large Yellow.....	1 15 @ 1 17 1/2
Small Yellow.....	1 40 @ 1 50
Eastern, in bulk (carload lots).....	1 10 @ 1 12 1/2

RYE.

Not much demand from any quarter, neither is there any great pressure to realize.

Good to choice, new.....	92 1/2 @ 97 1/2
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BUCKWHEAT.

The same inactive market exists as previously noted. Values are quotably unchanged, but are largely nominal for the time being.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

Not much doing, either in a wholesale or jobbing way. Offerings are in the main too light, especially from first hands, to admit of any noteworthy wholesale trading. Supplies are largely Lady Washingtons, Bayos and Pinks, and while market for these is more favorable to buyers than for other kinds, values through the entire list are being tolerably well sustained at the prevailing range. What the yield will be in southern California is uncertain, but it is probable there will be a very good crop in the Sacramento river region.

Pea, fair to good, 100 lbs.....	3 35 @ 3 50
Small White, good to choice.....	3 35 @ 3 50
Lady Washington.....	3 15 @ 3 25
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 70 @ 2 90
Bayos, good to choice.....	3 15 @ 3 35
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 25 @ 5 35
Black-eye Beans.....	4 50 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

Advices by recent mail from New York city give the following report of the bean market, prices quoted being per 60-lb. bushel:

West Indian exporters have not been inclined to use domestic Marrow beans so long as they could buy foreign in bond at \$1.70 @ 1.75 for the best goods, and the latter have absorbed practically all the orders until near the close, when 150 barrels were taken at a cost of \$2.10 @ 2.12 1/2. This unexpected demand, coupled with pretty fair jobbing trade, has made a little firmer market for choicest State, with some sales up to \$2.15, and a little fancy stock held higher. Medium have ruled quiet most of the week, and it has been a great surprise to the trade to see the wide difference in price between them and Pea maintained so long. The latter have not had important demand, but the limited quantity of stock available has made a generally firm holding on the basis of \$2.27 1/2 for barrels, and \$2.25 for choice bags. Best Red Kidney have declined to \$2, and only a few have sold at that; it looks as if less would be accepted for some choice lots, and the off grades have no certain value. Quite a number of lots have dark-colored beans mixed in, which have the appearance of being old; these can be bought at \$1.75 @ 1.80. Small export orders for White Kidney were filled at \$2.25, a few Yellow Eye sold at \$2.20, and Turtle Soup at \$1.70 @ 1.75, but the demand for all these varieties is so light

that values are largely nominal. Lima steady but quiet at \$3.52 1/2 @ 3.55. The best of the foreign beans are fairly sustained, but some pressure to sell other grades has resulted in the acceptance of somewhat lower prices; our outside figures are high except for a few choice goods, occasional lots of which exceed our top figures. Scotch peas have eased off a little, but neither they nor green are at all plenty.

DRIED PEAS.

Nothing of consequence doing in this line, and will not be for the next few months. Quotable values remain nominally in same position as before noted.

Green Peas, California.....	2 20 @ 2 35
Niles Peas.....	2 00 @ 2 25

WOOL.

Aside from some minor sales to manufacturers on this coast, there has been nothing done in this center, Eastern buyers still failing to get down to business. Markets East and abroad show fairly healthy condition, however, more especially in Europe, and it believed the current month will witness a change for the better, as regards movement in this center. While values are naturally not clearly defined, lower quotations than below noted are not warranted.

SPRING.

Humboldt and Mendocino.....	19 @ 21
Northern, free.....	16 @ 17
Northern, defective.....	13 @ 15
Middle Counties, free.....	15 @ 17
Middle Counties, defective.....	13 @ 15
Southern Mountain, 12 mos.....	11 @ 13
Southern Mountain, free, 7 mos.....	12 @ 15
Southern Mountain, defective, 7 mos.....	10 @ 12
Oregon Valley, fine.....	20 @ 21
Oregon Valley, coarse to medium.....	19 @ 20
Eastern Oregon, choice.....	17 @ 18
Eastern Oregon, fair to good.....	12 @ 16
Nevada, as to condition.....	15 @ 17

HOPS.

The usual mid-summer dullness is being experienced in this market, and that there will be any change of consequence until the opening of the new season is not likely. Offerings of Pacific coast hops at present are mainly Oregon product and include few which could be termed of desirable quality. Values are quotably unchanged, but there is scarcely any wholesale demand, either for shipment or on local account.

Good to choice, 1899 crop.....	6 @ 9
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The following review of the hop market, coming through by mail of recent date, is from a New York authority:

Over 1600 bales of hops arrived again this week, nearly 1150 bales of which came from the Pacific Coast, and 260 bales owned by a brewer were ordered forward from one of the warehouses in the interior of this State. The week opened with very warm weather, and this started numerous inquiries from both brewers and dealers, some business resulting. But a change to colder weather on Wednesday seemed to again check trade, and not as much has been accomplished this week as expected. The position as to prices is unchanged. There is a fairly firm holding of fine hops, either State or Pacific Coast, but the best of these are offering at 13c.; probably the bulk of the stock can be bought in range of 10c @ 12c., though there are still quite a number of the lower grades that are seeking custom at from 9c. down to 6c. for poor. Old olds find no place in the trade at present and are entirely nominal. Good progress has been made in the yards this week and a more intelligent idea of the condition of the roots can be had. There is quite a difference in the yards in different sections, and weak and missing hills have led to some plowing up. If there were 10% to 15% of the yards plowed up and the balance well cultivated it is probable that we should have more hops than last year, which was a light crop.

HAY AND STRAW.

Arrivals of old hay have been lately showing decrease, but there has been enough for immediate requirements. Values have been ruling steady, especially for the more desirable grades. Occasional sales of select Wheat hay are still being made up to \$10, although this can hardly be termed a quotable figure. New remains in poor favor, which will likely be the case for a month or more. New Oat ranges from \$4.50 @ 6, and new Wheat is quotable at \$6 @ 8 per ton.

Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 00 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 00 @ 7 00
Stock.....	5 00 @ 6 00
Compressed.....	6 50 @ 9 50
Straw, 1/2 bale.....	25 @ 37 1/2

MILLSTUFFS.

Bran was steadily held, owing to light stocks, but not much was required to satisfy the demand. Middlings were in fair supply and were offered at previous

figures. Shorts were in light stock and in limited request. Market for Rolled Barley was weak. Milled Corn was without quotable change.

Bran, 1/2 ton.....	12 00 @ 13 00
Middlings.....	15 00 @ 18 00
Shorts, Oregon.....	13 00 @ 15 00
Barley, Rolled.....	15 50 @ 16 00
Cornmeal.....	23 50 @ 24 00
Cracked Corn.....	24 50 @ 25 00

SEEDS.

There is little doing in this line at present, and not much stock of any sort to operate upon. In the absence of anything warranting making changes, former quotations are continued.

	Per ct.
Mustard, Trieste.....	3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25
	Per lb.
Canary.....	3 1/4 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	— @ —

BAGS AND BAGGING.

A fair business in Grain Bags is reported at steady rates. It is the general impression that values are as low as will be experienced the current season, or if any material breaks occur, they will be on surplus stock and too late to be of benefit to farmers in this State. In Oregon and Washington, where elevators are used, producers are in a better position to take advantage of the market, being able to defer purchasing until the wheat has to be delivered aboard ship.

Calcutta Grain Bags, huyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 1/4 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ 6 1/2
State Prison Bags, 100.....	— @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/2
Fruit Sacks, cotton.....	6 1/4 @ 7 1/4

HIDES, PELTS AND TALLOW.

The weak feeling previously noted continues to prevail for Hides of all descriptions, as also Pelts and Tallow. In Eastern centers values are lower than are current here.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 @ 9	
Medium Steers, 48 to 56 lbs.....	9 @ 8	
Light Steers, under 48 lbs.....	9 @ 8	
Heavy Cow Hides, over 50 lbs.....	9 @ 8	
Light Cow Hides, under 50 lbs.....	9 @ 8	
Wet Salted Kip.....	9 @ 8	
Wet Salted Veal.....	9 @ 8	
Wet Salted Calf.....	10 @ 9	
Dry Hides.....	18 @ 15	
Dry Kip and Veal, 11 to 16 lbs.....	17 @ 13	
Dry Calf, under 4 lbs.....	20 @ 16	
Salted Horse Hides, large.....	2 50 @ —	
Salted Horse Hides, medium.....	2 00 @ —	
Salted Horse Hides, small.....	1 00 @ —	
Dry Horse Hides, large.....	2 00 @ —	
Dry Horse Hides, small.....	75 @ 1 00	
Dry Colts' Hides.....	50 @ 75	
Pelts, long wool, 1/2 skin.....	1 00 @ 1 25	
Pelts, medium, 1/2 skin.....	70 @ 90	
Pelts, short wool, 1/2 skin.....	35 @ 60	
Pelts, shearing, 1/2 skin.....	20 @ 35	
Deer Skins, best summer.....	27 1/2 @ 30	
Deer Skins, good medium.....	20 @ 22 1/2	
Deer Skins, thin winter.....	— @ 10	
Elk Hides.....	10 @ 12	
Tallow, good quality.....	4 1/2 @ 5	
Tallow, No. 2.....	4 @ 4 1/2	
Goat Skins, perfect.....	30 @ 37 1/2	
Goat Skins, damaged.....	10 @ 20	
Kid Skins.....	5 @ 10	

HONEY.

Moderate quantities of new crop are coming forward, mostly Amber Extracted from the San Joaquin. Although supplies of old honey are about exhausted, demand for new does not appear to be very active or urgent. Sales of new Amber Extracted have been mainly within range of 6 1/2 @ 7c., little commanding over 6 1/2c. in anything like a wholesale way.

Extracted, White Liquid.....	7 @ 7 1/2
Extracted, Light Amber.....	6 1/2 @ 7
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	11 1/2 @ 12 1/2
Amber Comb.....	8 @ 10

BEE SWAX.

Business is of necessity light, owing to the limited offerings. Market is firm at the quotations, with demand good.

Good to choice, light, 1/2 lb.....	25 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Market for Beef was fairly steady but quiet. Mutton was not in excessive supply, and market presented a little firmer tone. Veal was scarce and against buyers. Lamb brought same prices as preceeding week. Hog market was without improvement, demand being slow and tendency toward easier figures.

Beef, first quality, dressed, net 1/2 lb.....	6 @ 6 1/4
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Beef, second quality.....	6 @—
Beef, third quality.....	5 @ 5 1/2
Mutton—ewes, 6 1/2@7c; wethers.....	6 1/2@ 7 1/2
Hogs, hard grain fed, medium.....	5 1/2@ 5 1/2
Hogs, small, fat.....	5 1/2@ 5 1/2
Hogs, large, hard.....	5 1/2@ 5 1/2
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 @ 5 1/2
Hogs, country dressed.....	6 @ 6 1/2
Veal, small, 10 lb.....	8 @ 10
Veal, large, 10 lb.....	7 @ 8 1/2
Lamb, spring, 10 lb.....	8 @ 8 1/2

POULTRY.

Owing to much lighter receipts of Eastern poultry than for a fortnight or more preceding, the market showed improvement throughout, but firmness was most pronounced on choice young fowls, medium size to full grown, such being in good request.

Turkeys, dressed, 10 lb.....	— @ —
Turkeys, live hens, 10 lb.....	11 @ 12 1/2
Turkeys, live gobblers, 10 lb.....	10 @ 11
Hens, California, 10 dozen.....	4 00 @ 4 50
Roosters, old.....	3 50 @ 4 00
Roosters, young (full-grown).....	5 50 @ 6 50
Fryers.....	4 50 @ 5 00
Broilers, large.....	3 50 @ 4 50
Broilers, small.....	2 00 @ 2 50
Ducks, old, 10 dozen.....	4 50 @ 5 00
Ducks, young, 10 dozen.....	5 00 @ 6 00
Geese, 10 pair.....	1 25 @ 1 50
Goslings, 10 pair.....	1 25 @ 1 50
Pigeons, old, 10 dozen.....	1 50 @ 1 75
Pigeons, young.....	1 50 @ 1 75

BUTTER.

Arrivals of choice to select fresh are on the decrease, owing to warm weather and also to quality of feed depreciating. Market is firm at quotations for best qualities of butter, and no likelihood of ruling lower this season.

Creamery, extras, 10 lb.....	18 @—
Creamery, firsts.....	17 1/2@—
Creamery, seconds.....	17 @—
Dairy, select.....	17 @—
Dairy, seconds.....	16 @ 16 1/2
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 15
Creamery in tubs.....	18 @ 20
Pickled Roll.....	18 @ 20
Firkin, California, choice to select.....	18 @ 19
Firkin, common to fair.....	16 @ 17

CHEESE.

This market presents fully as healthy tone as for some time past, there being a fair demand at full current rates for both regular flats and small cheese. Young Americas continue in lighter supply than flats and command relatively the best figures. New Eastern is beginning to come forward, but only in small quantity.

California, fancy flat, new.....	8 1/2@—
California, good to choice.....	8 @ 8 1/2
California, fair to good.....	7 1/2@ 8
California Cheddar.....	— @ —
California, "Young Americas".....	8 1/2@ 9

EGGS.

Demand is not brisk and never is at this time of year. Consumers are now running largely on fruits and vegetables. This will be the case for about two months, when the tide will again turn on to eggs and meat. In the meantime, however, the tendency on choice to select eggs will be to firmer rather than to easier figures, owing to decreased production and poorer average quality of offerings.

California, select, large, white and fresh.....	16 @—
California, select, irregular color & size.....	14 1/2@ 15 1/2
California, good to choice store.....	13 @ 14
Eastern, as to section and grading.....	15 @ 16
Eastern, cold storage.....	— @ —

VEGETABLES.

Changes have not been numerous or pronounced the past week in the quotable range of prices for vegetables now in season. Onion market ruled quite steady for good to choice new Red, the demand being very fair. Imported Australian are about out of stock, the clean-up having been made at unprofitable figures. String and Wax beans brought improved prices. Green Corn of choice quality sold to advantage. Cucumbers, Tomatoes and Summer Squash were in increased receipt and cheaper.

Asparagus, 10 box.....	50 @ 1 25
Beans, String, 10 lb.....	3 1/2@ 5
Beans, Wax, 10 lb.....	4 @ 5
Cabbage, choice garden, 100.....	40 @ —
Cauliflower, 10 dozen.....	50 @ —
Cucumbers, 10 box.....	1 25 @ 1 50
Egg Plant, 10 lb.....	6 @ 8
Garlic, 10 lb.....	4 @ 5
Green Corn, 10 doz.....	12 1/2@ 30
Onions, Red, Cal., good to choice.....	75 @ 1 00
Onions, Oregon, 10 cental.....	— @ —
Peas, Sweet, garden, 10 lb.....	2 1/2@ 3
Peas, Green, 10 sack.....	75 @ 1 25
Peppers, Green Chile, 10 lb.....	5 @ 7
Peppers, Bell, 10 lb.....	10 @ 12
Rhubarb, 10 box.....	75 @ 1 25
Squash, Summer, 10 large box.....	1 00 @ 1 50
Tomatoes, 10 box.....	1 00 @ 1 50
Tomatoes, Bay, 10 box.....	— @ —

POTATOES.

Old potatoes are still on market in limited quantity, mostly Oregon Burbanks, but the demand for them is naturally light at this late date and the market cannot be termed firm. New potatoes are arriving rather freely in both sacks and boxes. For ripe New of desirable size the market

inclined in favor of sellers, but poor qualities met with slow sale at low figures. A large proportion of the New potatoes arriving are under choice.

Burbanks, River, 10 cental.....	50 @ 80
Burbanks, Bay counties, 10 cental.....	50 @ 85
Burbanks, Humboldt.....	— @ —
Burbanks, Oregon.....	60 @ 85
River Reds.....	— @ —
Early Rose.....	— @ —
Garnet Chille.....	— @ —
New Potatoes, 10 cental.....	50 @ 1 00
Sweet, River, 10 cental.....	— @ —
Sweet, Merced.....	— @ —

The Fruit Market.

FRESH FRUITS.

The variety of fresh fruits offering in the deciduous and berry line remained much the same as preceding week. It was the exception where there were any radical changes in prices, but the tendency in the main was to lower figures. Cherries as also Berries of most kinds were in such liberal receipt that canners had to be depended upon for an outlet, and canners operated only at low prices, naming 1c@4c. per lb. for cherries, as to kind and quality, the latter figure being for choice Royal Anns. Neither Peaches nor Royal Apricots of desirable quality were in excessive supply. Clyman and Cherry Plums were in fair receipt, but it was the exception where they were sufficiently ripe to be especially sought after.

Apples, fancy, 4-tier box.....	— @ —
Apples, good to choice, 50-lb box.....	1 00 @ 1 25
Apples, common to fair, 50-lb box.....	50 @ 75
Apricots, Royal, 10 crate.....	75 @ 1 00
Apricots, Pringle, 10 box.....	40 @ 60
Cherries, Royal Anne, 10 box.....	50 @ 75
Cherries, Black Tartarian, 10 box.....	40 @ 65
Cherries, White and Red, 10 box.....	25 @ 40
Cherries, in bulk, 10 lb, Royal Anne, 4@5 1/2c; Black Tartarian, 3@4 1/2c; Red and White, 1 1/2@3c.	
Gooseberries, common, 10 lb.....	3 @ —
Gooseberries, English, 10 lb.....	6 @ —
Raspberries, 10 chest.....	6 00 @ 9 00
Blackberries, 10 crate.....	90 @ 1 15
Blackberries, 10 chest.....	8 00 @ 10 00
Logan Berries, 10 chest.....	6 00 @ 8 00
Cherry Plums, 10 box.....	40 @ 75
Clyman Plums, 10 crate.....	1 00 @ 1 25
Currants, Red, 10 chest.....	3 50 @ 4 50
Peaches, 10 box.....	65 @ 1 25
Pears, Madeline, 10 box.....	40 @ 65
Figs, Black, 10 crate.....	1 00 @ 1 25
Strawberries, Longworth, 10 chest.....	7 00 @ 9 00
Strawberries, Large, 10 chest.....	4 00 @ 6 00

DRIED FRUIT.

The conditions prevailing in the market for cured and evaporated fruits remain virtually the same as a week ago, and a repetition of the remarks then made would cover the situation at this date. About the only encouraging feature is the continued movement in Prunes. While market for this fruit is not quotably higher, it is firm at full current rates, and prospects are good for a clean-up at existing range of values. In immediate offerings there are few other than 50-60s and 60-70s, the smaller sizes being practically out of stock. New Apricots, July-August delivery, remain quotable at 7@7 1/2c for good to choice in sacks, delivered at producing points, buyers appearing to be more or less indifferent, while packers and producers see nothing to justify them in crowding business at these figures. Old Apricots are held far above the prices named for new to arrive, but are in very light stock and at current rates are salable only in small quantities for immediate needs. Market for Evaporated Apples shows no improvement, neither can it be said to be any worse than at date of last review. While there is no business of consequence to record in Apples, it is believed it will not be necessary to further cut rates, and that there will be a fair clean-up before new come upon the market. Peaches are dragging at last quoted decline. Present prices are quite reasonable, and it is not likely that further concessions to buyers would induce them to take hold more freely. Demand is slow and only to cover most immediate and pressing requirements, not on account of any fault being found with existing prices, but simply for the reason that there is no desire to carry old stock into the new season. Figs are still in fairly liberal supply, with prospects not encouraging for a speedy clean-up. Business in Pears and Plums is of insignificant volume and at generally unchanged rates, present stocks and offerings of these fruits being of small compass.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, 10 lb.....	10 @ 11
Apricots, Royal, fancy.....	11 @ 12
Apricots, Moorpark.....	13 @ 15
Apples, in 50-lb boxes, rings, pressed, fancy.....	5 1/2@ 5 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.....	4 1/2@ 5
Figs, White, fancy pressed.....	5 1/2@ 5 1/2
Peaches, unpeeled, good to choice.....	4 1/2@ 5
Peaches, unpeeled, fancy.....	6 1/2@ 7 1/2
Peaches, peeled, in boxes.....	12 @ 15
Pears, unpeeled Bartlett's, baled, fancy.....	9 @ 9 1/2
Pears, baled, unpeeled Bartlett's.....	6 1/2@ 7 1/2
Pears, quartered, unpeeled Bartlett's.....	6 1/2@ 7 1/2

Plums, Black, pitted.....	6 1/2@ 7 1/2
Plums, White and Red.....	7 @ 8
Prunes, in sacks, 40-50s.....	3 1/2@ 4
50-60s.....	3 1/2@ 3 1/2
60-70s.....	3 @ 3 1/2
70-80s.....	2 1/2@ 3
Prunes in boxes, 1/2c higher for 25-lb boxes, 1/2c higher for 50-lb boxes.	
4 sizes Santa Claras and equal.....	— @ —
4 sizes San Joaquin and Northern.....	— @ —
Prunes, Silver.....	4 @ 6

COMMON SUN-DRIED.

Apples, sliced.....	3 @ 4
Apples, quartered.....	3 1/2@ 4 1/2
Figs, Black.....	2 @ 3
Figs, White.....	3 @ 3 1/2
Peaches, unpeeled.....	3 @ 4

Mail advices of recent date from New York city furnish the following review of the dried fruit market:

Demand for evaporated apples has continued moderate, and with holders meeting buyers freely tone has weakened somewhat; prices show no material change, but outside figures are more extreme. Sun-dried apples are dragging, and chops and waste have only a moderate inquiry, with outside figures full and only reached for choice heavy packed. Raspberries more plenty and offered at 14 1/2c in quantity, but jobbing sales generally at 15@15 1/2c. Cherries scarce and firm. California fruit quiet; tone easy on peaches and outside figures extreme; prunes firm.

Apricots, Cal., Moorpark, 10 lb.....	14 @ 16
Apricots, Cal., Royal, 10 lb.....	12 1/2@ 13 1/2
Peaches, Cal., peeled, 10 lb.....	16 @ 20
Peaches, Cal., unpeeled, in bxs, 10 lb.....	7 1/2@ 9
Peaches, Cal., unpeeled, in bags, 10 lb.....	7 @ 8 1/2
Prunes, Cal., 10 lb.....	3 1/2@ 7

RAISINS.

Although official card rates are unchanged, values are unsettled, and the little business doing is at irregular and generally low figures. There are no large supplies, either here or in the hands of interior packers, but a greater demand than exists could be accommodated and would prove quite acceptable to holders.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, 10 box.....	1 60 @—
do do 2-crown, 10 box.....	1 50 @—
Valencia Layers, 20-lb box.....	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6 1/2@—
Loose Muscatel, seedless.....	5 @—
Pacifics.—2-crown loose Muscatel, 5 1/2c; 3-crown, 6c; 4-crown, 6 1/2c; seedless, 4 1/2c.	
Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.	

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, 10 lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, 10 lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.

Loose Valentias.—Fancy, 10 lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.

Valencia Clusters.—Fancy, 10 lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Oranges are offering in quite liberal quantity, both by auction and private sale, for this late date in the season. The demand is light, mostly for shipment, and for small rather than large fruit. Mediterranean Sweets, St. Michaels and Valentias are about the only varieties now receiving attention. Lemons have been in improved demand, on account of the warm weather, but values show no advance, the supply proving more than sufficient for the requirements. Stocks of Limes were of fair volume and prices remained quotably as last noted.

Oranges—Navels, fancy 10 box.....	2 75@3 25
Navels, good to choice.....	1 50@2 50
Navels, common to fair.....	1 25@1 50
St. Valentias.....	1 50@3 50
St. Michaels.....	1 50@3 00
Mediterranean Sweet.....	1 25@2 25
California Seedlings.....	75@2 00
Lemons—California, select, 10 box.....	2 25@2 50
California, good to choice.....	1 50@2 00
California, common to fair.....	1 00@1 25
Limes—Mexican, 10 box.....	4 00@4 50
California, small box.....	50@1 00

NUTS.

There is little doing in this department, which is not unusual for this date, the Summer season being generally a dull time in the nut trade. There are no offerings of consequence of either Almonds or Walnuts. Peanuts are in light supply and are commanding steady figures.

California Almonds, shelled.....	14 @ 17
California Almonds, paper shell, 10 lb.....	10 @ 12
California Almonds, soft shell.....	8 @ 9
California Almonds, hard shell.....	4 @ 5
Walnuts, White, soft shell.....	9 @ 10
Walnuts, White, California, standard.....	7 @ 8
Chestnuts, California Italian.....	8 @ 10
Peanuts, California, fair to prime.....	5 @ 6
Peanuts, Eastern, hand-picked.....	6 @ 6 1/2
Pine Nuts.....	5 @ 6

WINE.

Much of the wine now going to dealers represents deliveries on contracts. No large quantities are believed to be in first hands at this date. In quotable values there are no changes to record, wholesale figures for new dry wines being 14@16 per gallon. Some exceptionally fine wines are held up to 20c per gallon, but only in a limited way and for very superior stock is

anything over 16c obtainable. Shipment by sea from this port for the four month ended May 1st were 2,115,000 gallons and 2950 cases, valued at \$648,000. For corresponding period in 1899 the shipments by sea were 1,345,000 gallons and 2840 cases, representing a valuation of \$460,000.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/4 sacks.....	102,314	5,876,802
Wheat, centals.....	203,163	6,410,873
Barley, centals.....	50,360	4,932,528
Oats, centals.....	18,950	758,029
Corn, centals.....	2,360	137,526
Rye, centals.....	1,180	99,047
Beans, sacks.....	4,936	361,122
Potatoes, sacks.....	16,714	1,668,316
Onions, sacks.....	3,326	156,454
Hay, tons.....	1,994	144,715
Wool, bales.....	1,507	53,038
Hops, bales.....	179	10,452

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/4 sacks.....	124,672	3,965,474
Wheat, centals.....	82,188	5,630,132
Barley, centals.....	3,426	3,794,993
Oats, centals.....	1,177	45,123
Corn, centals.....	1,068	19,476
Beans, sacks.....	427	26,012
Hay, bales.....	3,300	134,174
Wool, pounds.....	4,324,433	1,792,407
Hops, pounds.....	7,891	1,063,777
Honey, cases.....	4	3,581
Potatoes, packages.....	411	71,210

California Dried Fruit at New York.

NEW YORK, May 29.—Evaporated apples, common, 4 1/2@5c; prime wire tray, 5 1/2@6c; choice, 6 1/2@7c; fancy, 7 1/2@8c. California dried fruits quiet in the main and unchanged; prunes firm at quotations. Peaches, 3 1/2@7c. Apricots, Royal, 12 1/2@14c; Moorpark, 15@18c. Peaches, unpeeled, 7@9c; peeled, 16@20c.

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A little stiffness or soreness in leg or body may lose seconds and hence lose a record. Chills, congestion and inflammation are the enemies of speed.



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Used in dilute form has no superior as a leg and body wash. Apply to the legs and bandage lightly. Apply to the body and blanket. Removes stiffness and soreness, prevents colds, congestion, and produces flexibility and firmness of muscles and tendons. For sale at all druggists. Sample bottle mailed for 6c to pay postage. Veterinary Experience—full of valuable information—100 pages, FREE. Dr. S. A. Tuttle, 33 Beverly St. Boston, Mass. BEWARE of all so-called Elixirs, none genuine but Tuttle's.

THE STOCK YARD.

On the Belgian Hare.

Mrs. A. Bush of Los Angeles has been lecturing at various points on the Belgian hare. At Stockton, according to the Mail, Chairman J. W. Cavis of the San Joaquin Valley Belgian Hare Club introduced Mrs. Bush, who said that she was greatly interested in the organization of Belgian hare clubs, for she had taken part in the organization of the first club formed in this country, in Denver. She stated that the people in northern California seemed as much interested in the business as those of Los Angeles, and that she had seen some fine animals in her recent visit in the vicinity of the bay. The climate here was in reality better suited to the culture of Belgian hares than that of Los Angeles, for the animals could endure cold better than heat.

At this point Chairman Cavis introduced the hare that was to serve as an illustration. He said that her sire was Unknown Mystery, and her dam Unknown Quantity, and he expected to sell her for a high price after she was scored.

Mrs. Bush placed the animal on a table, the ladies, in response to an audible request from a lady in the rear of the room, removed their hats, and the scoring began. She brought out the following points in regard to an ideal hare: The body color should be a rich Rufus red, much like that which nearly all Belgians have behind their ears. The animal should be of a pale slate color near the skin, as the individual hairs should be light-colored near the skin, red for the most part of their length and tipped with fawn, which makes the ticking. Ticking should not be even, but should be wavy—that is, in spots, but not in streaks. The hindquarters should be gray, but having as much of a tendency to red as possible. The jaws should be of a deep cinnamon color, though it is difficult to get that tint. Mrs. Bush said that in all her experience she had seen but three hares that were perfect in that particular.

The body should be symmetrical. The distance between the shoulder joints and the hip joints should be at least 10 inches, and 11 is better. The flank and ribs should be long and slim and well tucked up, giving the appearance of speed and raciness. Many lose in this particular on account of improper care. Hutchies should be at least 5 feet long and provided with hurdles, so that the hares may have plenty of exercise, which will develop grace and symmetry. The back should be arched, and to produce this condition requires considerable exercise.

The head should be long and narrow through the jaws—not wider at the jaws than at the ears. The lacing of the ears is the black tips which nearly all Belgians have. It should be wide, of a jetty appearance, and extend 1½ inches down on each side from the tip of the ear, not showing white edges. The ears should not be more than 5 inches long, and a little less is better. If

longer, they are liable to droop in warm weather. The ears should lie well together and be of a rich golden tan color. The eyes should be bold and large, having an expression of alertness.

The front legs should be at least 6 inches in length and should be straight. Wry feet are usually caused by over-feeding young animals, and they disqualify an animal from appearing in a show. The feet should be red and free from ticking and white spots or bars. Even the hind feet should be red. White hairs below the nails are called padding, and do not injure the hare.

In size a hare of ten months should weigh at least eight pounds. For every half pound under that amount one point is taken off in scoring. The flesh should be firm and the skin should be tight. A dewlap is a bad mark if it is prominent. The color under the body should be a creamy white, though a few fine hares are of a cinnamon color beneath the body.

When the deficiencies of the hare under consideration were figured up, it was found that her score was 88. In view of the fact that the highest scoring doe, Palace Queen, is rated at 96½, and that Wantage Fox of Alameda and Lord Nason and Ajax of Los Angeles score 96, Mr. Cavis was subjected to a good deal of chaffing about his "champion."

Mrs. Rush spoke at considerable length of the proper food to be given hares. The bill of fare for her rabbitry is as follows: A mash of middlings and linseed meal, mixed with hot water and seasoned with a little salt and a handful of alfalfa hay, from which the leaves have been shaken off, is the morning meal. At noon carrots and onions are given. Onions are said to be an excellent food, and there is no danger of feeding too many of them. At night whole barley and whole oats were given. She does not believe in much barley, as she thinks it makes the skins of the animals loose and makes the hares lazy. Stale bread is a good food, and milk may be fed to hares that are being raised for the market. Green food may be fed, but sparingly at first.

Young hares should be left with the doe until about three months old, though they may be taken from her at two months.

A hare scoring 93 may be called "good," while one that scores 94 is "fine." The average age of the Belgian hare is four years.

What Bogus Butter Is Made Of.

The House of Representatives recently called upon the Treasury Department to report the kinds of materials used, the amount of each ingredient and the per cent that each bears to the total amount of oleomargarine produced in the country for the year ending June 30, 1899:

Materials.	Pounds.	Percent- age.
Neutral lard.....	31,297,251	34.27
Ole oil.....	24,491,697	26.82
Cottonseed oil.....	4,357,514	4.77
Sesame.....	486,310	.53
Coloring matter....	148,970	.16
Sugar.....	110,164	.12
Glycerine.....	8,963	.01
Stearine.....	5,890	.07
Glucose.....	2,550	.03
Milk.....	14,200,575	15.576
Salt.....	6,773,670	7.42
Butter oil.....	4,342,904	4.76
Butter.....	1,568,319	1.72
Cream.....	3,527,410	3.86
Totals.....	91,322,260	100.

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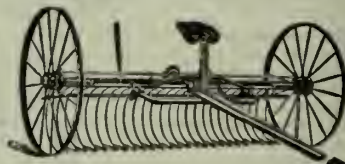
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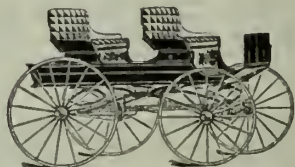
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NO. 1. WORLD BEATER BUGGY.

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The Census Now Being Taken.

The count of the people in the United States began in all parts of the country June 1, and will end in the cities in two weeks and in the rest of the country before the close of the month. The people are to be counted at their places of residence; but, as many persons and families will be away from their homes during June, there is some danger that such persons will not be counted. If they are not counted, the locality in which they live will be misrepresented to that extent, and in some cases this misrepresentation may be enough to affect the representation in Congress of the State from which they come. Local pride and State pride, therefore, should influence all such absentees to take reasonable precautions against being omitted from enumeration in their places of residence. Such omissions are most likely to occur in the large cities where families close their homes and go elsewhere for the summer. The occurrence of the Paris Exposition this year is likely to increase the number absent from the country.

In all cases of contemplated absence, the head of the family is requested by the Census Office to communicate with the supervisor of the district in which he lives. He is also requested to leave information regarding his answers to the questions which are to be asked with some responsible neighbor who will agree to see that it reaches the enumerator on his rounds. Such information might better be left as a memorandum in writing, as in that case it is less likely to be overlooked. The questions to which answers are desired apply primarily to the population, but also to all farms and manufacturing establishments. They are being published from time to time in the press of the country.

By taking this trouble the absent citizen will do justice to his locality and his State and materially aid the Census Office in the performance of its duties.

The census schedule will include inquiries about the age, color or race, date of birth, conjugal condition, number of years married, place of birth, year of immigration to the United States, naturalization, occupation, number of months not employed, school attendance, and ability to read or write of all persons to whom these questions are applicable. In addition, inquiries will be made about the ownership of homes and farms, farm acreage, value and quantity of farm products, amount of livestock, etc.

CENSUS QUERIES.—The blank schedules to be used in the census are now being distributed by the Census Office to the enumerators, who started to work on June 1. The schedules contain questions which some persons may think prying, purposeless or excessive in number. But their number and character have been determined by Congress, not by the Census Office, and all of them have been asked in previous censuses. The only important change since 1890 is that some questions have been abandoned.

People are often offended at the question, "How old are you?" and are apt to wonder what use the Government can make of their replies. Taken as a whole, the replies are as important as any class of information the Census Office collects. Age returns penetrate and elucidate every other branch of statistical knowledge. They show where child labor is prevalent, and where the proportion of persons able to support themselves is large or small. They reveal the great number of colored children and the short life of the negroes under present conditions. They make it possible to ascertain whether the average length of life is increasing or decreasing, how many men the nation contains who are capable of voting or of bearing arms, and whether the relative number of children is increasing or decreasing.

In Mohammedan or semi-civilized countries like India householders are often unwilling to answer the question regarding the sex of persons in the house, but in civilized countries where the sexes are regarded as on an equality, such unwillingness does not appear.

The answers to the questions show that in nearly all cities the females outnumber the males, and that the same is true of most of the States along the Atlantic coast. The belief is widespread that, taking the world in general, there are more females alive at any given time than males, and that if it were not for immigration there would be more females in the United States than males. But census statistics show that we can not explain the great excess of males (over one and a half million) in the United States by immigration alone, for when the foreign-born are left out of account there are still above 600,000 more males than females.

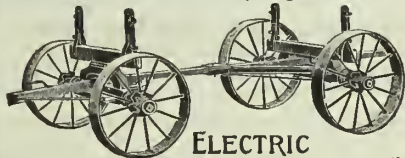
Few would dispute the necessity for asking questions regarding race. All arguments regarding the future of any particular race in this country, like the Indian, the negro or the Chinaman, must hinge upon the returns in the census. With the Indians, moreover, it is of the highest importance to learn what success the policy of the Government has met with in establishing them apart from their tribes and reservations, and whether such Indians are increasing or decreasing.

Some mothers may shrink from stating the number of children they have had and the number who are living. But from the answers to these questions the country will learn whether the native American population is holding its own or whether, as some have claimed, it is being gradually supplanted and displaced by the children of recent immigrants.

In the light of such explanations, and only a few of the most important questions have been touched upon, it may perhaps be clear to the public that no question has been ordered by Congress, or has been asked by the Census Office, which, if properly and correctly answered, will not lead to suggestive inferences regarding the American people and their work.

Labor Saving Conveniences.

Success on the farm today is largely proportioned to the saving of time and labor—which means economy of production—and not higher prices for farm products. Probably no single machine or appliance saves in the aggregate so much time and hard labor as the modern low down handy wagon. Take for



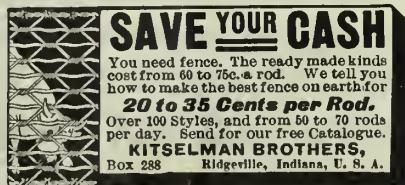
ELECTRIC
instance the loading and hauling of manure, ensilage corn, grain in the straw, corn fodder, hay, &c., all hard to load, the use and advantages of a low down wagon are almost inestimable. The Electric Low Down Handy Wagon excels for these purposes. Has the famous Electric steel wheels, is light, strong and durable. Write Electric Wheel Co., Box 10 Quincy, Ill., for catalogue.



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List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
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FOR PACIFIC COAST.

FOR THE WEEK ENDING MAY 15, 1900.

649,817.—PULVERIZER—C. W. Day, Santa Cruz, Cal.
649,541.—ROTARY ENGINE—J. W. Flowers, S. F.
649,829.—TRAP GUN—A. H. Forstner, Salem, Or.
649,602.—ROCK DRILL—Greene & Brady, S. F.
649,607.—NEEDLE FILLING MACHINE—J. E. Inman, Kalama, Wash.
649,854.—MOUTH DILATOR—J. A. W. Lundberg, S. F.
649,466.—GAS GENERATOR—L. Mayhew, New Whatcom, Wash.
649,873.—SPIKE PULLER—F. Newnham, Los Angeles, Cal.
649,874.—FLOWER HOLDER—T. Payne, Los Angeles, Cal.
649,706.—LOCK—B. Phelps, Seattle, Wash.
649,646.—TRUSS—D. S. Plum, El Dorado, Cal.
649,547.—ROCK DRILL PISTONS—P. H. Reardon, S. F.
649,548.—ROCK DRILL SLIDES—P. H. Reardon, S. F.
649,551.—ELECTRIC LIGHT CARBON—J. F. Sanders, Portland, Or.
649,878.—BICYCLE GEAR—P. J. Scharbach, Woodburn, Or.
649,648.—DRYING APPARATUS—C. R. Splivalo, S. F.
649,881.—HYDROCARBON BURNER—C. R. Sutton, Carpinteria, Cal.
649,561.—PIANO ACTION—J. L. Wilson, Los Angeles, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

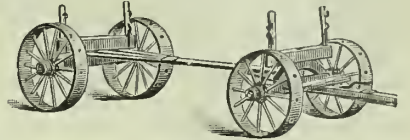
AUTOMATIC LOCKING MECHANISM FOR SIDEWALK OR OTHER ELEVATOR DOORS.—Peter H. Jackson, San Francisco, Cal. No. 648,624. Dated May 1, 1900. This invention relates to an automatic mechanism for securing and releasing elevator hatchway doors, and is especially applicable to the doors which close over sidewalk elevator platforms or hoists. It comprises details hinged to the hatchway frame and closable to meet on the central line, a vertical movable elevator platform, guided slidable locking bolts adjacent to the edges of the doors, said bolts having right and left screw threads cut upon their inner ends, a revoluble journaled sleeve or turnbuckle having corresponding threads within which the bolt ends fit. A weighted lever is connected with this and turnable by the rise and fall of the elevator platform so as to withdraw or advance the bolts. A curved ball is fixed to the elevator platform, and when this starts to rise, it contacts with the weighted lever, turns it so as to withdraw the bolts, and the continued upward movement of the ball with the platform separates the doors and opens them when the platform and the ball descend, after the latter has passed below the line of the doors the latter commence closing and finally close as the ball descends still lower and this allows the weighted lever to act to force the bolts into their sockets.

ROCK DRILL.—E. M. Greene and Wm. Brady, San Francisco, Cal. No. 649,602. Dated May 15, 1900. This invention relates to improvements in rock drilling apparatus. It consists of one or more cylinders with pistons and means by which the pistons are connected with the drill so as to move in unison therewith. Explosive vapor is admitted, compressed and ignited in the cylinder or cylinders to impel the drills forward for the stroke, and an independent power mechanism is applied for returning the parts after the stroke has been delivered. In connection with this is a suitable valve mechanism by which the explosive gas is admitted alternately to each of the cylinders so that the first one and then the other acts to impel the piston. The gasoline power drill has great advantages over the present drill. It will do away with engine, boiler and air compressor, as the power will be used directly on the drill. It is expected that it will do as much work as the present power drill does, and it will be placed in the hands of the miner at a price that the miner of small means can reach. The miners using the drill will have the power with them using it directly on the drill, thereby doing away with an engineer, and the cost of the power itself will not be one-twentieth part what the power costs to run the present

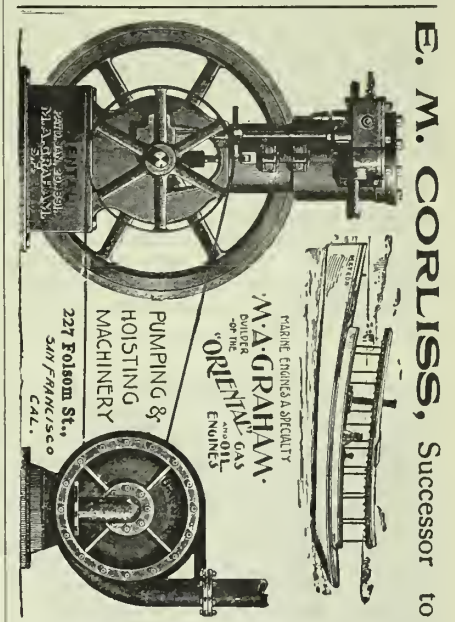
power drill where wood or coal is used to produce power. The field for such a drill is great, on account of so many miners being unable to purchase the expensive outfit now required. Drawings for a full sized power drill are now in the hands of the builder.

Farm Wagon only \$21.95.

In order to introduce their Low Metal Wheels with Wide Tires, the Empire Manufacturing Company, Quincy, Ill., have placed upon the market a Farmer's Handy Wagon, that is only 25 inches high, fitted with 24 and 30-inch wheels with 4-inch tire, and sold for only \$21.95.



This wagon is made of the best material throughout, and really costs but a trifle more than a set of new wheels, and fully guaranteed for one year. Catalogue giving a full description will be mailed upon application by the Empire Manufacturing Co., Quincy, Ill., who also will furnish metal wheels at low prices made any size and width of tire to fit any axle.



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Because it is the farmer's only organization national in character.
Because it has stood the test for thirty-two years, and has never been found wanting in any respect.
Because it has exerted greater influence in securing State and National legislation in the interest of agriculture than any agency in the country.
Because it is officered by those engaged in agriculture, who know from experience the needs of farmers, and are sincere in their desire to aid them in every possible way.
Because it is the duty of farmers to co-operate with one another, if they would successfully meet the influence of organization in every direction, and secure for wife and home a full share of what the harvest yields.
Because it has secured National legislation in the oleomargarine law, the establishment of the interstate commerce commission, the establishment of rural free mail delivery, and State legislation in every State in the interest of the farming population.
Because it has exerted the greatest influence known in breaking up the isolation of farm life, and in making farm life attractive to the boys and girls, bringing sunshine and happiness into the farm home to such an extent as has never before existed.

San Jose Grange.

At the meeting of the Grange Saturday in Hale's Hall an interesting programme was rendered, according to the Mercury. The circular letter sent out by the Cured Fruit Association, dealing with a proposed modification in the packers' and growers' contract, was read at the meeting and the following resolution adopted:

Resolved, That the Grange believes the Cured Fruit Association is in the hands of honest and efficient men, and, if they believe that this modification is essential to the interests of the growers, we, the members of San Jose Grange, are willing to give it our hearty endorsement, and recommend that the growers sign the slips and return them promptly, that the Association may go forward and do the work for which it was organized.

Speeches favoring this movement and urging all to aid the Association were made by Messrs. Pettit, Saunders, Bryant and Volney Rattan. It was stated that one firm of packers were fighting the Association, and, as they had made much money out of the growers, some of the members present considered that this bellicose firm was actuated by selfish motives.

Sacramento Granges.

Sacramento Grange, Patrons of Husbandry, held its annual Strawberry Festival May 26, at Foresters' Hall, and combined with it children's day.

In addition to the Grangers and their wives, nearly a hundred children belonging to their families were present and took part in both the programme in the hall and that at the table, and thoroughly enjoyed both. E. Greer was master of ceremonies, and everything under his management was carried out like clockwork.

Pomona Grange expects to hold a special meeting on June 2, and the Grangers are making preparations to go to Fair Oaks some time in the near future to visit Fair Oaks Grange and exemplify the work on thirty-two candidates who are waiting for initiation.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

Sold by Druggists, 75c.
Hall's Family Pills are the best.

A Brainy Horse.

The almost human efforts of a horse to rescue himself from drowning in the bay at Lilly & Borgardus' wharf, San Francisco, is reported in the Trade Journal. The horse was a most valuable one, his owner, John S. Williams of Tacoma, setting the price at \$1000. At the time of the accident, which nearly resulted in the loss of the animal, it was being led from the wharf across the gang-plank for shipment to Tacoma. The sudden tooting of a whistle caused the animal to shy and slip off the plank into the water. Great excitement prevailed while the beast floundered desperately in the bay. There was no place for the horse to land nearer than Galbraith's wharf, and it looked as though the steed was a goner. At this stage somebody suggested to throw a line and as the manila hit the water the spectators were dumbfounded to see the struggling beast seize the end of the rope in its mouth, gripping it firmly. In the meantime a boat had reached the scene and, although a hawser was made fast about the horse's neck, to tow him, he refused to loosen the rope in his mouth. In this manner the equine was towed to a landing and hauled safely on shore. The second attempt to load the horse was more successful and he is now in Tacoma.

France Leads the World.

Consul Skinner at Marseilles reports to the State Department that the total production of wine in the Old World in 1899 was about 3,444,728,464 gallons, or an increase of about 406,213,973 gallons over the year previous. France leads all countries, producing over 1,265,000,000 gallons, Italy being next with over 766,000,000 gallons and Spain third with over 594,000,000 gallons. Spain produced about 60,000,000 gallons less in 1899 than in 1898 and Italy about 65,000,000 gallons less. France produced over 400,000,000 gallons more in 1899 than in 1898.

TOO MUCH FAT.

Anyone who has suffered from the deformity of too much fat, knows how to sympathize with the wife of a prominent Congressman at Washington who had to give up her social leadership on account of her excessive corpulence. Like a drowning man who grasps at a straw, she tried everything she heard of or could think of and yet continued to get fat. Finally, the treatment of a celebrated German lady specialist, without inconvenience or detriment to her health, reduced her weight to its normal proportions.

Any woman or man who is suffering as she was can accomplish the same results or check the tendency to obesity. There is no starvation, no violent exercise, you can take the treatment unknown to your friends and all the medicines you may need can be got at any drug store. If you write to Mrs. Eleanor Kirby, American Tract Society Building, N. Y., and enclose the small fee of one dollar, she will tell you all about the treatment and what to do. There is no other charge and she has no medicines to sell. If the treatment is not practical and satisfactory the fee will be returned.

BANANGE.

One teaspoonful of this extract in a quart of Ice Cream makes a most delicious dessert. If you are tired of the old standby flavors try BANANGE. It is an entirely new and distinct flavor. To introduce it we make this offer: Send fifty cents, or, still better, twenty-five cents and the names and addresses of ten housekeepers in your locality and we will mail you a large bottle postage free.

L. D. WALKER & CO.,

Extracts and Fruit Syrups,

416 MARKET ST., SAN FRANCISCO.
LODGE AND CHURCH SOCIALS SUPPLIED FREE.

WHY THE BEST?

BECAUSE they are made on correct principles, therefore give the best results. The Menzel Hardware Co. of Santa Clara, Cal., state that "they have put up a large number of pumps of all kinds this season, but yours give us and our customers the best satisfaction."

BURTON PUMP AND MACHINE WORKS have removed to 44-46 Main St., San Francisco, Cal., and will give full particulars and furnish estimates of pumps run with gasoline or steam engines. Horse powers or windmills—complete plants. Closing out stock of second-hand gasoline engines, 1 to 20 H. P.

SUGAR PRUNE BUDS. —AND— CLIMAX PLUM BUDS.

Burbank's Latest Kinds.
SEND FOR PRICES.

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WHITEWASHING —AND— TREE SPRAYING PUMPS.

Prices from \$4 to \$60. Nozzles from 75 cts. to \$1.00. Catalogues. WM. WAINWRIGHT, 1411 Jackson St., San Francisco. Telephone Hyde 2886.

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"Pasteur Vaccine"

SAVES CATTLE FROM

BLACK LEG

Nearly 2,000,000 successfully treated in U. S. and Canada during the last 5 years. Cheap, safe and easy to use. Pamphlet with full particulars, official endorsements and testimonials sent FREE on application.

Pasteur Vaccine Co., Chicago.

BRANCHES: St. Paul, Kansas City, Omaha, Ft. Worth, San Francisco.

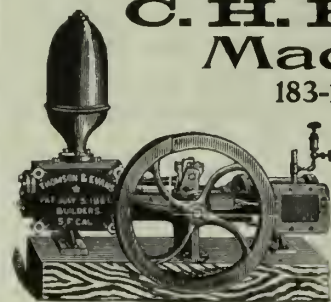
Nitrate of Soda as a Fertilizer.

CROP FAILURES

are practically impossible where NITRATE OF SODA is used as a fertilizer. Its use has made an exact science of crop growing. You can always rely upon a good crop when it is used singly or in proper combination with other elements of plant foods.

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316 California Street, - - - San Francisco, Cal.
Write to them for pamphlets.



C. H. EVANS & CO., Machine Works,

183-185-187 FREMONT STREET,

Where, with Enlarged and Increased Facilities, they are better than ever prepared to do

First-Class Machine Work

Promptly, and at Reasonable Prices, and will continue the manufacture of

Thomson & Evans Steam Pumps,

Deep Well Pumps, Power Pumps, Etc.,
Also Marine Engines, Ship and Steamboat Work,
Pipe Cutting, General Jobbing and Repairing.

FRANCIS SMITH & CO.,

—MANUFACTURERS OF—

SHEET IRON & STEEL PIPE

FOR TOWN WATER WORKS.

Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes.
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Iron cut, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making Pipe. Estimates given when required. Are prepared for coating all sizes of Pipes with Asphaltum.

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TRIUMPH STEEL RANGE

into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21 1/4 inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship O. O. D. with privilege of examination.



California Fruits.

NEW EDITION (3rd)

By E. J. WICKSON.

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The third edition of this great work and indispensable companion of progressive fruit growers is now ready for immediate delivery.
The book has been practically rewritten by the author, and contains the latest and best methods of practice on the subjects of which it treats.

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Inventors on the Pacific Coast will find it greatly to their advantage to consult this old experienced first-class agency. We have able and trustworthy associates and agents in Washington and the capital cities of the principal nations of the world. In connection with our scientific and Patent Law Library, and record of original cases in our office, we have other advantages far beyond those which can be offered home inventors by other agencies. The information accumulated through long and careful practice before the Office, and the frequent examination of patents already granted, for the purpose of determining the patentability of inventions brought before us, enables us to give advice which will save inventors the expense of applying for patents upon inventions which are not new. Circulars and advice sent free on receipt of postage. Address DEWEY, STRONG & CO., Patent Agents, 330 Market St., San Francisco, Cal.

"ALPHA-DE LAVAL" CREAM SEPARATORS.



The De Laval Cream Separators were first and have always been kept best. They have always led in improvements, which imitating machines must await the expiration of patents to use. The 20TH CENTURY improvements give them still greater capacity and efficiency. They are immeasurably superior to any other system or method that can be employed in the separation of cream—saving \$5.- to \$10.- per cow per year over any setting system and \$3.- to \$5.- over any other centrifugal method. All sizes, styles and prices—\$50.- to \$800.-

Send for new "20TH CENTURY" catalogue.

THE DE LAVAL SEPARATOR CO.
RANDOLPH & CANAL STS., | 74 CORTLANDT STREET,
CHICAGO. | NEW YORK.

Hop Growers Combine and Call a Convention.

The hop growers, whose proceedings have been recorded in the PACIFIC RURAL PRESS during the last two weeks, have finally organized and called a general convention. The Record-Union says the committee on organization did their work well, and in the entire Sacramento valley district there is scarcely a hop grower who has not either signed the rolls of the organization or signified his willingness to stand in and work on any proposition which is for the good of all. Up to date the following named persons, with the acreage of hops of each, are members of the association:

Daniel Flint, 90 acres; George Wittenbrock, 32½ acres; Albert Mouton, 42 acres; A. A. and R. H. Merkley, 30 acres; J. McMorry, 25 acres; Jacob Casselman, 24 acres; Paul E. Peterson and H. Fraser, 22 acres; George C. Brewer, 50 acres; T. B. Lovdal, 350 acres; B. W. Cavanaugh, 28 acres; S. B. Slight, 45 acres; O. O. Lovdal, Geo. B. Lovdal and W. E. Lovdal, 110 acres; Antone Koch, 5 acres; Mrs. E. Merkley, 22 acres; M. S. Lavenson, 30 acres; G. M. Haslon, 10 acres; F. W. Menke, 40 acres; G. H. Menke, 50 acres; J. J. and C. H. Merkley, 32 acres; W. H. Leeman, 125 acres.

Besides these, E. P. Durst, Smith Bayles, A. Koch, John Mahan, F. V. Flint, J. T. Silva & Co. and other growers whose acreage could not be ascertained, are also on the rolls.

The association was organized by the election of the following officers and board of directors:

President, Daniel Flint.
Vice President, W. E. Lovdal.
Secretary, A. A. Merkley.
Treasurer, S. B. Slight.

It was decided that the board of directors should consist of nine members, including the officers of the association, and the following were named without opposition: Daniel Flint, W. E. Lovdal, A. A. Merkley, S. B. Slight, Geo. C. Brewer, Dr. D. P. Durst, P. C. Drescher, T. B. Lovdal, George Wittenbrock, M. S. Lavenson and W. H. Leeman.

After a long discussion the board of directors was instructed to draft a call for a State Convention, which will probably be held in Santa Rosa on June 23d, and the directors of the association were named as delegates to such convention.

It was also agreed that any other members or growers who could attend the convention would be considered as accredited delegates to the convention, the idea being to get as large an attendance as possible.

The call soon to be issued will thoroughly explain the objects of the convention and the ends aimed at, and will be sent to each individual grower in the State, soliciting his attendance.

To Preserve the Game.

The House passed the Lacey bill to enlarge the powers of the Department of Agriculture and to prohibit interstate commerce in game killed in violation of local laws. It authorizes the Secretary of Agriculture to provide for the introduction and restoration of

game and insectivorous wild birds. It gives him the power to prevent the introduction of undesirable foreign birds and animals and prevents the killing of game in violation of State laws for concealed shipment to States where it may be sold in the open market.

Pure Food Law.

TO THE EDITOR:—May I ask you to call the attention of your numerous readers to the Brosius Pure Food bill, which is national in its scope and of vital importance to the welfare of the nation.

The Interstate Commerce Committee has already reported favorably on the bill, which will soon come before the House.

A postal card to your Representative in Congress asking him to vote favorably on this important measure will help bring about this long hoped for national anti-adulteration legislation. Merced. A. R. GURR.

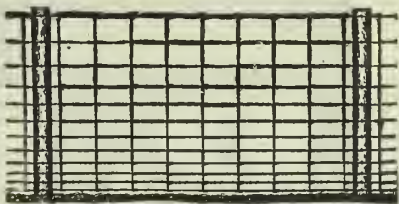
This is a good proposition; we hope readers will act upon it.

American Field and Hog Fencing.

The wire of which "American" Fencing is made is a special hard steel drawn by the American Steel & Wire Co. for this especial purpose, the tensile strength and springiness being much greater than in ordinary fence wire.

The galvanizing is done by the American Steel & Wire Co.'s patent continuous process, is very evenly distributed and the coating is the best possible to secure, while the spelter or zinc is of exceptionally high quality, thus rendering the "American" Galvanized Steel Fencing more surely proof against rust than any ordinary fence.

The weaving of "American" fence is very carefully done, while the structure of the fence provides amply for all expansion and contraction due to weather conditions.



The wires in the "American" fence are all large and very strong. They are not so large that they increase the cost by reason of weight, but they are large and strong enough to resist all attacks of large or small animals, and will turn the fiercest stock without damage to the stock or the fence.

"American" Woven Wire Fencing is sold by agents in almost every town in this country, but if any of our readers should be unable to find an agency for "American" Fence in their market town, they can secure catalogues and all information necessary by writing to the manufacturers, the American Steel & Wire Co., the Rookery Building, Chicago, Ill., or Empire Building, New York.

A New Insecticide

Is Swift's Arsenate of Lead, manufactured and sold exclusively by Wm. H. Swift & Co. of Boston, Mass. It has been tested for all classes of insects, worms, moths, bugs, beetles, etc., which are injurious to fruit and shade trees, berries, vines, plants, etc., and the manufacturers say in each case it has given satisfaction and produced good results. It is white in color; and, unlike any other insecticide now on the market, adheres to the leaves so that frequent applications are not necessary. The makers say it will not scald, burn, or blight the foliage in any way.

Chicago, Ill., April 3, 1891.

Dr. S. A. Tuttle, Boston, Mass., Dear Sir:—After being confined to my bed by diphtheria for some while, at last I was advised by a friend to try some of your Elixir. It seemed funny to me to have him suggest such an idea, but as he continued to press me on the subject daily, I tried a bottle. I used it, and was surprised at the immediate relief I derived from same, and in a few days I was entirely cured. I think it a wonderful remedy and we also use it on our horses. Yours truly,

JOHN BANHOLZY,
Hammer Manufacturer.

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Sold by jewelers in cases to suit.
Prices reasonable.

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BREEDERS of all the
leading strains of
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SEND FOR OUR 60-PAGE CATALOGUE, JUST ISSUED.



Breeders' Directory.

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HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs, Poultry, William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A.J.C.C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale

POULTRY.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue and guide free. Agents Eclipse Aluminum Leg Bands and Rabbit Labels.

WILLIAM NILES & CO., Los Angeles, Cal. Poultry, Belgian Hares. Imported pedigreed stock.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

MANHATTAN POULTRY & STOCK FOOD is best. All grocers. Depot, 1253 Folsom St., S. F.

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BERKSHIRE, POLAND-CHINA & DUDOC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

P. H. MURPHY, Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Hogs

BREEDERS' SUPPLIES.

HENTEETH, Blood Meal, Bone, Chick Feed; circular free, or 4 samples, prices, etc., mailed for 5c postage. Poultry, Pigeon and Belgian Hare Supplies, Incubators, etc. Croley, 506 Sac'to St., S. F.

THIS IS IT.

The incubator which has put an end to all hatching worries and difficulties. Its simplicity in operation and its uniform success in hatching every fertile egg makes



THE PETALUMA INCUBATOR the best investment you can make. There's no uncertainty about its work. And then, it's built to last. 4 sizes—64 to 324 eggs. We pay freight anywhere in U. S. Handsome catalogue free. PETALUMA INCUBATOR CO., BOX 19, PETALUMA, CAL.

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Real Showy, Handsome Creatures.
Prize Winners from Prize Winners.

Then visit or correspond with

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Prince Britain, Chief Kitchener, Red Ranger, and other choice bucks at stud.



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Tells all about it.
SAMPLE COPY MAILED FREE.
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are Sole Agents for the Pacific Coast.

LIVE OAK STOCK FARM,

Six Miles N. W. from PETALUMA, on the
Petaluma and Sebastopol Road.

FRANK A. MECHAM, Prop.
Importer and Breeder of

Red Polled Cattle.

Color Deep Red. Both Sexes for Sale.
Address all communications PETALUMA, SONOMA CO., CAL.

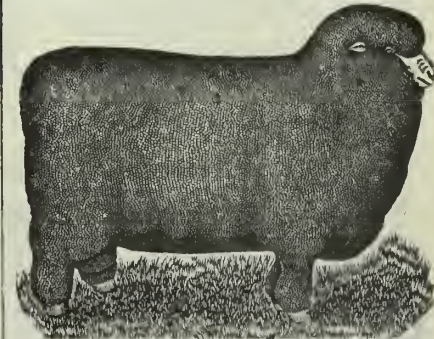


FRANK A. MECHAM.

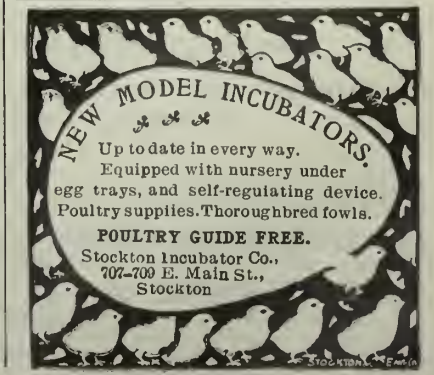
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They were all imported from England, or bred direct from imported stock.

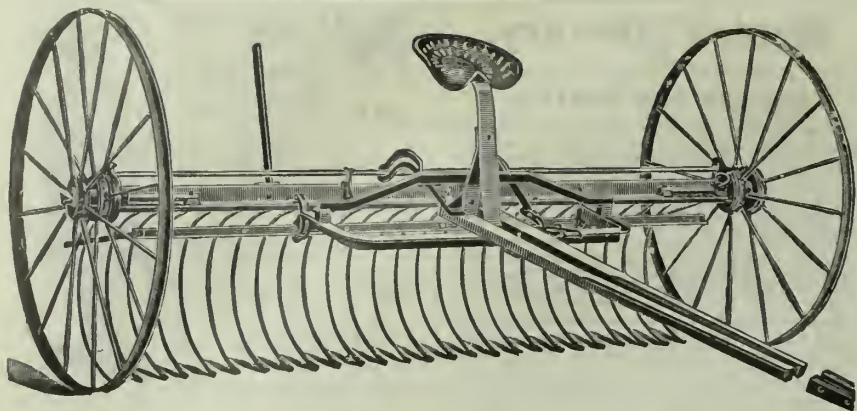


We have also bred American Merinos—Hornless Sheep—for 30 years. They are a large sheep, without wrinkles. Rams will produce 20 to 25 pounds of long, white wool yearly. Sheep of both sexes for sale.



FRANK A. MECHAM, Importer and Breeder.
Shipping Points: PETALUMA AND SANTA ROSA, SONOMA CO., CAL.





PACIFIC CHAMPION RAKE.

SELF DUMP.

Wheels are made with extra wide channel steel tire, with the spokes riveted into the malleable hub and riveted into the tire so there is no possible way for the same to become loose, as is the case where the spokes are screwed into the hub and held with a nut, but they can readily be replaced by a blacksmith.

The frame of the rake is made of forged angle steel, and the teeth are connected to the same by metal tooth sections, and connected to the head by bolts in such a manner that the teeth can be put in or taken out one section at a time.

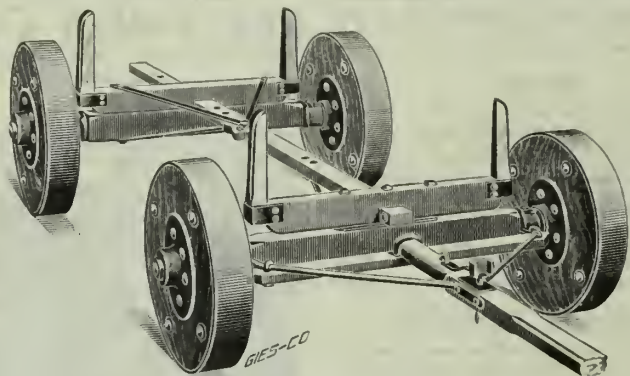
The spring seat is arranged to adjust in height to suit a small boy or man by simply changing two bolts.

The rake dumps from both wheels by ratchet wheels which are encased at the end of the rake head to prevent the wheels winding with hay.

The dumping device is most simple and durable in its construction. The rake is entirely under the control of the operator when raking on either rough or even ground by the use of our improved foot treadle, and the teeth can be held up by pressing the foot treadle when the rake is dumped, or the teeth can be held down by pressing the foot treadle when the rake is in operation.

HOOKER & CO.,

16 AND 18 DRUMM STREET, - SAN FRANCISCO, CAL.



"CALIFORNIA SPECIAL" FRUIT AND FARM TRUCK.

Steel Wheels, 28 and 30 Inches, 4-in. Tire. Wood Wheels, 28 and 30 Inches, 6-in. Tire.

Guaranteed for Five Years. LOW in Price.

Write or Call. ALLISON, NEFF & CO., 222 Mission St., San Francisco.

The Machine that will Build a Butter Trade.

Because it will make a superior quality of butter.

THE SQUEEZER

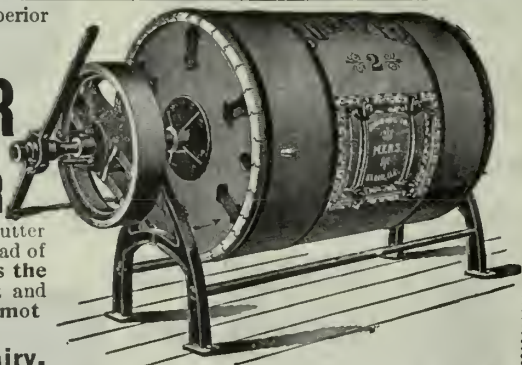
COMBINED CHURN AND WORKER

squeezes the water and butter milk out of the butter instead of grinding it. It preserves the grain, distributes the salt and color evenly and prevents mold. It is

Made for the Dairy, and is easily operated and readily cleaned. No dairy should be without it.

Will do Exhaustive Churning at any Temperature.

We are prepared to repair all cream separators and employ highly skilled men for this work. Write for Catalogue No. 81. ELGIN MANUFACTURING CO., ELGIN, ILL.



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IN USE ALL OVER THE PACIFIC STATES.

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Pacific Saw Manufacturing Company

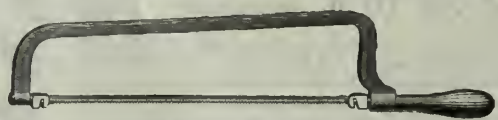
Manufacture the

"HATCH" Pruning Saw.

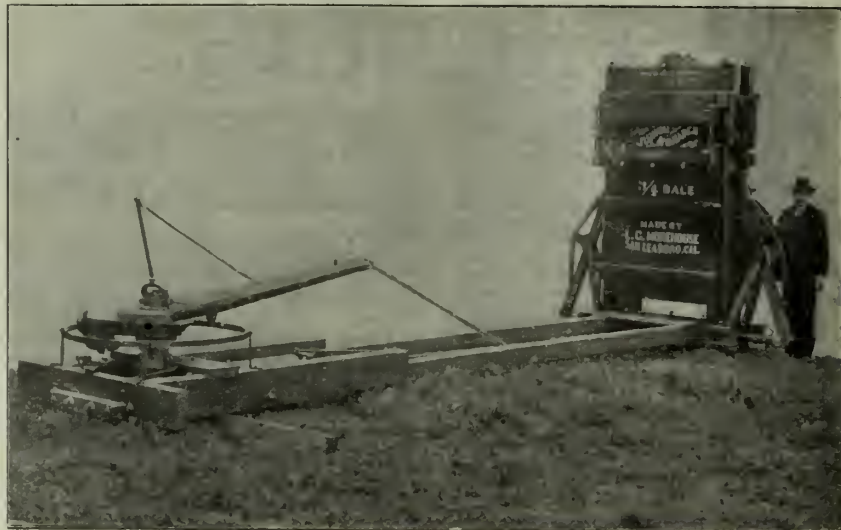
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Emery Wheels, Grindstones, Files, Saws,

Machine Knives, Etc. Sheet Steel. Tel. Main 5052. 17-19 Fremont Street, San Francisco, Cal.



Junior Monarch Hay Presses for 1900.



Owing to the advance in prices of the raw material, I have been obliged to advance prices as follows:

Monarch Press (Compress Bale) 17x20x40	- - -	\$600 00
Junior Monarch (3/4 Bale) 20x22x44	- - -	\$600 00
Junior Monarch (Standard) 22x24x47	- - -	\$550 00

L. C. MOREHOUSE, San Leandro, Cal.

WM. H. GRAY, General Agent.

The only roofing without a fault

P & B

Ready Roofing

Paraffine Paint Co
116 Battery Street—San Francisco

The best builders in America use P & B Ready Roofing

Shingles may warp, slate may chip, tin may sweat, tar may run, or iron expand, but P & B will stand any climatic condition—the weather of the west requires it

Demand it of your dealer

CALIFORNIA FRUIT GRADER.

10 to 50 Tons per day.



Accurately Grades...

APRICOTS, PEACHES, PLUMS, PEARS, ETC.

Blymyer Bells...

Church, School, Fire Alarm, Etc.

PACIFIC MERCANTILE CO., 308 MARKET ST., SAN FRANCISCO, CAL.

THE "NEW CENTURY" A Grand Success.

JACKSON, MICH., Feb. 26, 1900.

It affords me pleasure to report the U.S. "New Century" separator a grand success. I find it vastly superior to either the old pattern or the DeLaval, both of which I have been using side by side. I find the capacity increased about 50 per cent. It is a smoother and lighter running machine and a closer skimmer.

H. F. PROBERT, Breeder of Jersey Cattle.

We furnish a complete line of Dairy Apparatus. Catalogues free. VERMONT FARM MACHINE CO., Bellows Falls, Vt.



ASPHALT PAPER PIPE.

IMPERISHABLE.

For Water Works, Mining and Irrigation Plants, Drains, Electrical Conduits. No Corrosion—Electrolysis Proof. Will Not Rust—Alkali Proof. Cheaper Than Iron.

MCCARTHY & MACKAY,
226 MARKET STREET, SAN FRANCISCO, CAL.

Dewey, Strong & Co., Patent Agents,
330 Market Street, San Francisco, Cal.

THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 23.

SAN FRANCISCO, SATURDAY, JUNE 9, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Bench Grafting Resistant Vines.

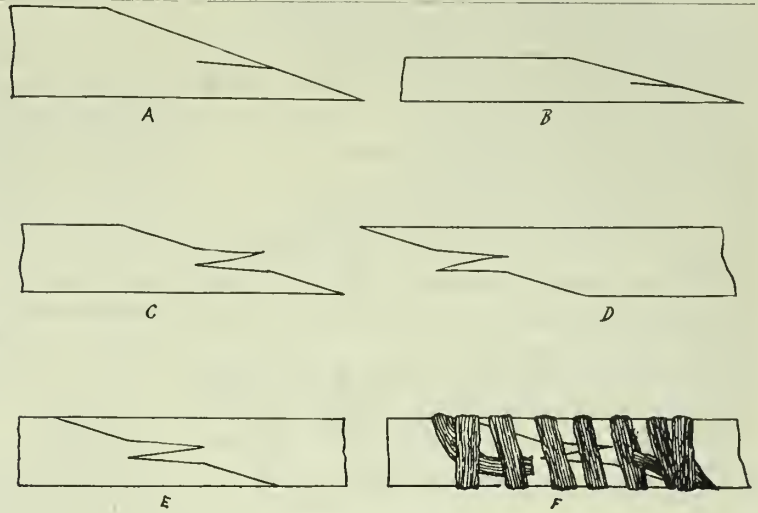
We alluded recently to the recourse to resistant roots as an escape from ruin by phylloxera, and cited the work done at the University Experiment Station in the testing of the adaptability of different roots for this purpose. The publication of Messrs. Bioletti and Dal Piaz relates also to the comparative value of different ways of grafting—in fact, its chief object is to set forth local results with bench grafting of resistant vines, so that one can plant in the vineyard a rooted vine which shall contain the resistant root and whatever vinifera top is desired, strongly grown together, and thus escape all the labor of grafting in the vineyard and the uneven stand which too often follows this practice.

Bench grafting formerly had rather a bad name in this State. Early ventures with it were largely failures; and, in view of more recent successes, it seems likely that the early efforts were not correctly made. In view of this fact, the University publication on the subject is particularly important. Messrs. Bioletti and Dal Piaz give with much minuteness their handlings of the cuttings of the rupestris St. George and of the vinifera scions which they used. Before grafting, the cuttings for both stock and scions having been carefully sorted into three sizes, and the eyes of those of the stock cut out deeply with a sharp knife in order to prevent the production of suckers, the greatest care was taken to prevent the slightest drying out of the cuttings and afterwards of the grafts. The raffia used for binding the grafts was soaked in a 3% solution of bluestone (copper sulphate) for one day and then hung up to dry. Before using, it was thoroughly washed in running water to remove the superfluous bluestone. The raffia was cut into short pieces of 10 to 12 inches and then kept in a box, moist and ready for use.

The object of the experiment in methods of grafting was to ascertain the advantages and disadvantages of the two most commonly practiced methods, viz., the English graft and a modification of the old Champin graft. The first is universally used in European vine nurseries; the latter is less practiced there, but is frequently used in California.

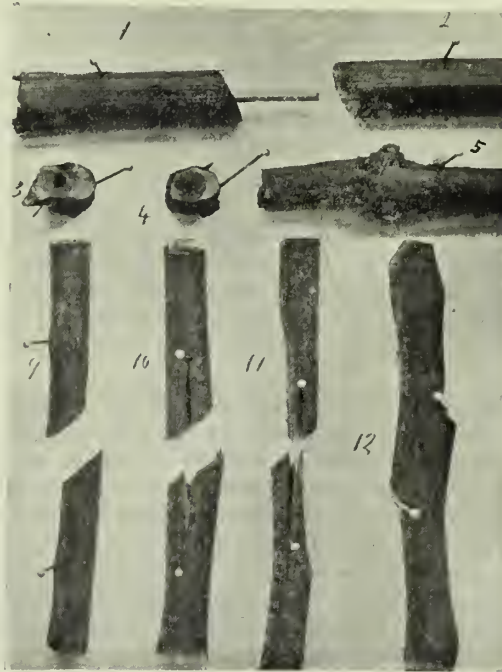
This method was applied in the usual way, as shown in the outline engraving on this page. The stock and scion were chosen of equal size and were cut at the same angle. The length of the cut surface, in cuttings of solid texture and full size, was about three times the diameter of the cuttings. This

may be taken as the maximum angle that can be used practically. For smaller cuttings the length of the cut was relatively somewhat greater, being about four times the diameter. The tongues were made by a longitudinal cut, care being taken not to split the wood, and usually commenced at about one-third the distance from the sharp end of the cutting and to a depth about equal to the diameter. Thus, when the two cuttings were placed together, the sharp end of one corresponded exactly to the thick end of the other, so that no portion of the cut surface was exposed and the maximum contact was obtained. Perhaps the most common method of grafting used in California for small vines or cuttings is a modifica-



English Cleft Graft.

A, Proper angle of cut for large cuttings; B, Proper angle of cut for small cuttings; C, D, Proper size and angle of tongues; E, F, Method of uniting and tying graft.



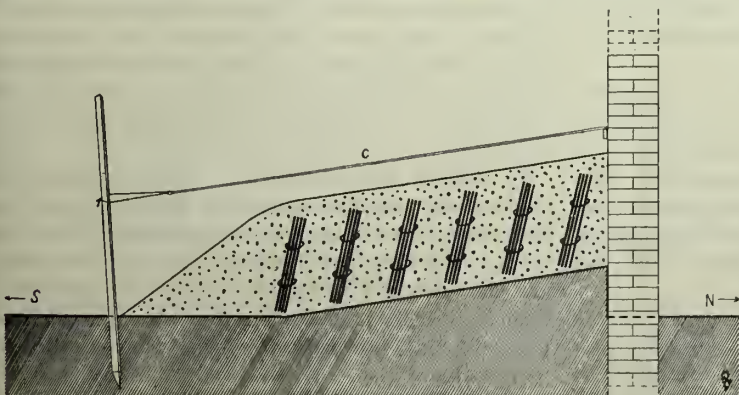
End-to-End and Champin Grafts.

1, 2, Method of making End-to-End graft; 3, 4, Cross-section through union of above graft, showing how completely stock unites with scion on all sides; 5, Union of End-to-End graft; 9-12, Method of making Champin graft.

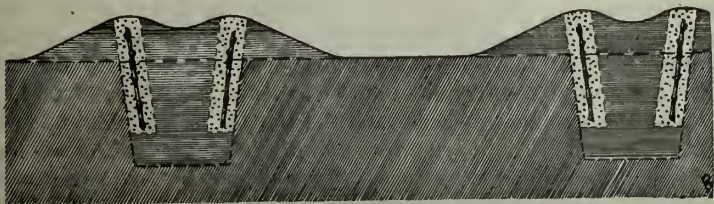
tion of the latter. Another method, new and not thoroughly tested as yet, was tried with a few cuttings. This method originated in France, and is called "End-to-End" grafting. Its nature is shown in the engraving. The ends of stock are cut at an angle of about 70° and are held together by a piece of galvanized iron wire which is pushed into the pith of each piece. The number of successful grafts was low, but those which did unite made such excellent unions that the method seems worthy of further trial.

After the cuttings are grafted, as described, they are placed in a callusing bed before they are put in the nursery, so that we can have more perfect control of the conditions which favor the formation of callus. The sand used was taken from Napa creek and was very suitable for the purpose. The grafts were put in the sand nearly vertically in bundles of ten, in rows. The sand was moistened sufficiently to give it the compactness necessary for making the piles. The location of the sand pile was chosen on the south side of a building, which protected the sand from the north winds and rendered it possible to give the grafts the maximum amount of sun. A layer of about 4 inches of sand was put on the bottom and then the grafts were put in vertically and covered up as soon as they came from the grafting bench. The tops of the grafts were covered with a thin layer of sand (about 2 inches). The whole pile of sand with the grafts was then covered with a waterproof cloth, in order to protect the grafts from excessive moisture and to maintain the even temperature of the sand during cold weather and at night.

The grafts were planted in the nursery after they had been from six to eight weeks in the callusing bed. When the grafts were taken out of the callusing pile it was noticed that the unions of those which had been buried on the south side were much more complete than those buried on the north side, showing the effect of heat in promoting the formation of healing tissue. The grafts were planted out in the nursery. In planting, a trench was dug about 18 inches deep and 15 inches wide. The bottom of the trench was then filled in for a few inches with well pulverized top soil, in order to facilitate the penetration of the roots. The grafts were placed 4 inches apart nearly vertically, in two rows (one on each side of the trench), sand being previously placed on each side in order that the bases of the stock should be in favorable condition for root formation and growth. The trench was then completely filled by putting in soil and sand alternately in such a manner as to surround the grafts completely with sand. The point of union of scion and stock was placed at a level with the surface of the soil and was also carefully surrounded with sand. Sand was then heaped completely over the scions.



A Callusing Bed for Cutting Grafts.



Method of Planting Cutting Grafts in Nursery.

tion of the Champin method, as shown in another engraving. The modified method is a compromise between the true Champin graft and the English tongue graft. It is made in a way similar to that described for the latter, but the tongue is made much deeper, and the end of the point, as shown in the engraving, projecting over the cut of the opposite cutting is cut off. The Champin graft is based on the theoretical principle that the greater the surface of contact between the two cuttings the greater the chances of union. Thus, in the English graft the amount of possible contact is theoretically only about half that of the Champin. In practice, however, it is found that the contact in the English graft can be made so much more perfect than in the Champin graft that the actual contact is usually greater in the former

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E. J. WICKSON.....Horticultural Editor.

San Francisco, June 9, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—English Cleft Graft; End-to-End and Champin Grafts; A Callusing Bed for Cutting Grafts; Method of Planting Cutting Grafts in Nursery, 353.
EDITORIAL.—Bench Grafting Resistant Vines, 353. The Week; The Opportunity in Agriculture; Miscellaneous, 354.
QUESTIONS AND REPLIES.—June Budding; Dying Almond Trees; Apple Tree Troubles; Potato Blight; Flgs Dropping Leaves; Orange Trees Diseased at the Base, 353.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending June 4, 1900, 355.
HORTICULTURE.—Frost Fighting for Fruit, 356.
THE FIELD.—Uses for Cyanide Poison, 357.
THE APIARY.—Pollination the Best Work of the Honey Bees, 357.
FRUIT MARKETING.—Crop Reports and Prices, 358.
THE VETERINARIAN.—Answers by Dr. Creely—Treatment for Injured Teat; Removing Warts; A Test for Glanders; Udder Affections, 358.
FLORIST AND GARDENER.—A Treatment for Tomato Troubles, 358.
CORRESPONDENCE.—Notes on Fruit Growing in Italy; Deeper Rooting Desirable, 358.
AGRICULTURAL REVIEW.—359.
THE HOME CIRCLE.—The Marseilles; A Day in June; A Shoppy Romance, 360. Brave Boer Girl Defeats Kitchener; Treating Disease with Light; Reputation; How Much to Eat and be Healthy; Why Grant Never Swore; Ladies Publish a Magazine, 361.
DOMESTIC ECONOMY.—Hints to Housekeepers; Strawberries; Cooking the Hare, 361.
THE MARKETS.—Produce Market; Fruit Markets, 362-363.
THE IRRIGATOR.—What Can be Done on Land Moist from Underflow, 364.
PATRONS OF HUSBANDRY.—Co-operation in the Sale and Manufacture of Farm Products, 366.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors, 364. The Debris Question, 365. Caring for the Harness, 367.

The Week.

All weather conditions have favored the harvester, and all sorts of crops are coming on in good shape. In fruit lines the greatest activity is still on the commercial side, and the keenest concern is naturally shown about the prices likely to prevail. The canners have made a list of prices which is published in our Market Review. It strikes us as altogether too low, but possibly it is only intended as a foundation to build upon. We doubt if they will get much fruit at prices so far below the equivalent of present dried fruit rates. There is much neighborhood assembling and discussion of these matters and that is the proper way to meet them until we get broader agencies. The prune growers have extended the time for the new contracts until June 15th and the prospect is that the requirement of 80% to 90% of the acreage will be covered. The raisin association is still rearranging its programme and the outlook is favorable.

Spot wheat is firm but unchanged, although options have advanced in sympathy with less favorable crop reports from Chicago. Four wheat cargoes have cleared this week, but it needs more shipping activity to help the spot market. Barley is weak and lower; oats unchanged, with a scarcity of high grades and too much ordinary. The Government has nearly cleared out the colored oats. Corn is quiet and unchanged, though it is possible to put down Eastern corn here at a little less than formerly. Old hay is steady, with fair demand, and new hay neglected. Bran and rolled barley are weaker. Beef is quiet and mutton steady. Hogs are firm, dairy hogs being out and grain not yet due. More Eastern hogs are likely to arrive, but no drop in values is anticipated at present. Butter and cheese are both firm, the latter meeting a keen demand, with a scant supply. Egg prices are advancing and fine, selected eggs are strongly held. Poultry is weak and lower, Eastern and local supplies both being large. Dry beans are slow and weak for the few kinds now in sight. Potatoes are unsettled, fluctuating widely. Yellow onions are now in and reds pushed down. There is a splendid display of fresh fruits now in all city markets and supplies are free. Citrus fruits are hurt by the summer fruits, though choice oranges are taken for shipping, while poor are neglected. There has been a large receipt of almost worthless, uncured lemons, which can profit no one. Prunes are clearing up well and are firm; other dried fruits are lifeless at present. Wool is still low, with little doing and receipts small.

The Opportunity in Agriculture.

One of our young fruit growers has gone to Europe to see something of fruit growing in the old world, and some of his letters in our local paper seem to have been read with considerable interest. One thing has sometimes made me a little indignant, and that is the frequently expressed surprise that one of our ordinary ranch boys should go abroad at all and, if he did, that he should see things and write of them intelligently. Why not?

I cannot help thinking that our high schools and universities are radically wrong in training our young men, and women, too, so largely away from rural occupations. There is no nobler occupation than man has turned his hand and brain to than horticulture in California, and the too general impression that he who engages in it as a life business is necessarily a clodhopper should be corrected in some way.

These reflections which come to us in a private letter from a well-known fruit grower will serve admirably for a text upon which to rest a preachment along lines parallel to others which we have recently traced. Of course the surprise that a young farmer should go abroad and be able to describe well his observations is suggestive of the whole subject of the standing of agricultural pursuits and the prevailing popular conception of it, and it is the broad aspect of the incident noted by our correspondent which we would consider at this time. It is the enlistment of our young men in agricultural pursuits, or, as we may term it, the relation of the young men to the agricultural future of California.

Young men in agriculture. The subject naturally suggests two pictures. One is a young man of our time, full of confidence, ambition and energy. He is not the young man of a few generations ago, content to follow without question the pathway his ancestors have trod, nor to accept the lines which others mark out for him. The young man of to-day has a mind of his own. He may have self-conceit, instead of self-confidence; he may be headstrong, rather than self-reliant, but there is no reason to disparage him. We have to deal with the young man of to-day as we find him; and however we may mourn the disappearance of the young man of long ago, with his reverence, loyalty and unquestioning obedience, our tears will not bring him back again. Nor is it altogether sure that it would be desirable to recall him from the pages of history. It is easier to believe that the young man of to-day is a new creation, especially designed to live in a new age and to accomplish wonders of which the ancients could have no conception.

The other picture suggested by our subject is a comprehensive view of country life and work. And country life of to-day is not that of a generation or two ago. Agricultural work is not ruled by tradition and fable as it once was. The spirit of progress has breathed upon it, science illumines its pathway, and invention has equipped it for full success under the new conditions. Never before was agriculture so well fitted to merit the epithet, "A noble calling." How, then, can these two leading features of our subject be interwoven? How shall our young man, with his full self-reliance, his irrepressible energy, his insatiable longing for stirring experiences and exciting thoughts, be drawn into a scene like that which Thompson thus describes: "An elegant sufficiency, content, retirement, rural quiet, friendship, books, ease and alternate labor, useful life progressive virtue, and approving Heaven?"

How shall the young man be led to appreciate these charms of country life without quenching his ambition, curbing his youthful energy, and repressing his longing for a life of enthusiastic action? This is a question which has vexed the present generation not a little, and upon its right solution depends not only the success and comfort of thousands, but the progress of our agricultural industry.

In the minds of men a birth and early life upon a farm have been generally conceded to be of advantage to a young man, because so many of those who have achieved fortune and renown have been farmers' sons, but the popular idea is that a man is great or can be great only after his escape from agricultural surroundings. What is it, then, which prompts a young man to forsake agriculture? In most cases it can be traced to the common belief that agriculture does not offer young men the opportunity for the exercise of the powers which they think they possess. There are statistics to show that by far the greater number of those who forsake fair prospects upon

farms never rise above subordinate positions in other callings which they choose, but this fact does not dishearten the young man when he contemplates the flight from the farm, although the experience of later years may press it sadly upon him. The thought which leads most young men to turn away from agriculture is a desire for improvement, an ambition for wider success, an impulse to greatness. It is a thought which should stir the breast of every young man. It is attended by a confidence in his abilities—a self-trust, a purpose. It is a thought which is essential to every success. It is an indication of the possession of youth's nobility and strength. Pluck this thought from the mind of a young man and you have taken away everything which can make him of value to himself or to the world. A young man who has not earnestly thought of leaving the farm is of little value either to go or stay upon it. Every calling of mankind should be carefully reviewed, and there should be no barriers to a choice of that which careful examination approves.

If there is anything tiresome to the thought of a young man it is an idea of completion. When he begins to think the thoughts of manhood he thrusts an eager inquiry into the ways by which men bring themselves into contact with the world. Then it is that agriculture seems most distasteful to him. He is apt to think, and older men are apt to encourage the opinion, that agriculture is a complete affair; that there is nothing more to learn about it; that the methods which have been implied cannot be improved; that all a young man can do upon a farm is to tread again well beaten paths. And what does he see and hear elsewhere? In all the professions he sees a ceaseless struggle for new truths, or new ways of applying old truths to health, the happiness or the salvation of mankind. In the commercial calling he sees constant efforts for new means and materials for gaining wealth and position. In the manufacturing industries he hears of new ways of applying physical power, the inventor following closely upon the progress of the scientific discoverer—the exciting story of a fortune in a day by a new and happy thought. Everywhere there is tireless activity, continual progress, and success attained as success was never attained before. Can any one wonder that the young man yearns to try his strength and skill where every one is moving and the prize is to him who pushes farthest onward? The young man longs for something upon which he can stamp the impress of his individuality. He must have something which will give him a chance.

There is but one way to operate successfully and in a salutary manner upon this spirit of a young man, and that is in guiding it, enabling him to see the dangers which beset the paths which lie open, and in revealing opportunities where all may to him seem fixed and chanceless. This is the duty which now presses upon the men who have in their keeping the present and future of our agriculture. They cannot hold their sons by recounting the dangers to which young men are exposed in great cities. They cannot be frightened by accounts of weakness or of wickedness or by visions of early burials. Another way must be adopted. They must be shown that agriculture is not a finished book. They must be led to understand that its brightest pages are still to be written. They must be convinced that there are opportunities as great upon the farm as elsewhere. In short, agriculture must be disclosed to them in the true light of its progressive character and its possibilities.

It is true that agriculture has tarried behind the commercial and manufacturing industries, but not because it does not possess the capability to go forward. The farm has given for years its best brains and strength to develop other industries, and now it finds itself behind them all in the struggle for that progress and improvement which bring wealth and gratified ambition. There is only one way now for it to go forward, and that is by exercising the same spirit, the same ceaseless activity, the same earnest desire for better understanding and fuller knowledge which have achieved success in commerce and manufacturing industries. All the young brains of the country must not be expended in guiding the whirl of busy wheels and the clatter of springs and levers. There are forces at work in orchards, in grain fields, and in pastures, which are not the less powerful and worthy of study because they act silently. All the

acute intellects of the rising generation must not be bended down upon ledgers and invoices. There are problems just as satisfactory, when rightly solved, in processes which yield well-filled granaries and fruit houses, as those which result in laden ships and bending counters.

The better conception of the opportunity for young men in agriculture and the training which will enable them successfully to seize upon it will, we believe, banish from view the shallow error and prejudice of which our correspondent fitly complains. It is true that our whole system of education from the lowest to the highest institutions must be made to better harmonize with the truer view of agriculture as a pursuit and promote it. Our own observation is that these changes are now gaining wonderful popularity with teachers and that the speed with which they are realized rests not so much with the teachers as with the farmers themselves. When fond mothers and proud fathers themselves realize the advantages of their own life work in agriculture, there will be less ground for complaint of the schools. When the farmer ceases to proclaim that all other farmers' children should stay on the farm while he holds his own to be so brilliant that they must be prepared for professions, we shall find more consistency and more weight in the exhortations to young people to stay upon the farm. There is surely coming a truer view of agricultural opportunities and the advantages of rural life and one of the greatest present needs is that farmers themselves should discern and embody this view in their own spirit and in their own lives.

QUERIES AND REPLIES.

June Budding.

TO THE EDITOR:—Is it a good plan to bud early—have the buds start out instead of lying dormant? How far above the bud would you cut the top off? Is it a good plan to leave any growth above the bud? In tying, would you commence at bottom and tie up, or vice versa? Is there any surer way of wrapping the bud than with cotton twine? Should buds be pinched off after they have attained a growth of a foot or more?—ORCHARDIST, Sutter county.

June budding is quite applicable providing you have well-matured buds to operate with. You need, of course, buds from this year's growth; and if you wish to secure early development of them, pinch the ends of the shoots which you propose to use for bud sticks. This will plump out the buds and enable you to work much earlier. In order to secure the starting of these buds as soon as possible, it is desirable to throw the sap flow into them as soon as they are ready—that is, after a few days in place, you find that they are of good color and have "taken" well, either remove part of the branch into which you have put the bud at some distance above it or break down the branch a foot or so beyond the bud and allow it to hang there. This will take part of the sap and prevent the bud from "drowning" by an excessive sap flow. As soon as the growth of the bud has run out a few inches, cut back the shoot to a point just above the bud and its growth will proceed in good shape. We have never found any difference in wrapping from the bottom up, or vice versa; both cases seem to be successful. It is a little better in June budding, when there is apt to be a very strong flow of sap to make the crosscut below the bud and not above it—pushing the bud up into place and not down into place. This gives a little better opportunity for excessive sap to escape. Raffia is rather a better material for wrapping buds than cotton twine, as it protects the cut surfaces better. It is a good idea to pinch off the tip of new growth from the bud after it has run out a foot or so, because this promotes low branching and prevents a long shoot which may easily break out by the wind or by its own weight.

Dying Almond Trees.

TO THE EDITOR:—My almond trees seem to be suffering from some malady that I am not acquainted with. They were badly hurt last summer by drought, and the red spider seized on them in August. The land has been well cultivated and had enough rainfall to support the trees, and they looked well until a week ago the leaves began to fall. Half the leaves of the Golden State trees have dropped. Can you advise me?—READER, Sutter county.

The specimens show no disease in sufficient amount

to account for the condition of the trees. There was exceedingly little wood growth last year and this year less—in fact the tree only seems to have had vitality to send out scant leaves without twig extension and these are now falling for want of sap. Either the trees were so badly hurt last year that their absorbing root hairs were lost and no vitality remained to restore them, or this year's rainfall did not penetrate well, or there was not enough of it to restore proper moisture to the lower strata. In this case this year's cultivation would avail little. The moisture conditions at a depth of 3 feet should be learned by digging, but we are of the opinion that the trees are too far gone to be saved.

Apple Tree Troubles.

TO THE EDITOR:—I very greatly appreciate the page in your paper devoted to queries and replies. Enclosed please find two twigs taken from a young, vigorous apple tree. The one having the curly leaf was earlier in the season possessed by lice, much the same as the prune aphid you described in the issue of May 5th; also, an occasional green grub—the latter remaining after the former left. Since this occurred the apples on these limbs are withering up. The other twig looks as though it were mildewed, and such leaves are quite prevalent on the younger trees. What is the best remedy for woolly aphid? Also, for preventing the oozing out of sap on prune and apricot trees?—F. E. ROBINSON, St. Helena.

The curling and discoloration of the leaves formerly affected with the aphid are due to the work of that insect. Their piercing and, possibly, poisoning the tissue, causes the leaf to show serious injury even after the insect is destroyed. Sometimes the leaves fall, but are not often hurt enough for that. The other twigs have the powdery mildew of the apple. The remedy is blowing sulphur on the new shoots, just as you sulphur to check vine mildew. It is not often possible to prescribe directly for gumming of trees, because gumming is not a disease, but is a sign of trouble. It may be due to insect attack, or to sun burn or to root troubles, arising from either too wet or too dry soil. If everything is right for the tree, it will not usually gum. If the gum appears in large masses, it should be taken off, the outer bark removed so far as discoloration is found and the wound poulticed with a mixture of clay and cow manure held in place by a tight bandage, or it may be covered up with paint or grafting wax. If a bark wound be covered with a moisture-retaining poultice, the new bark may grow from minute granulations on the surface of the alburnum. If the wound is painted, it has to grow over by the intrusion of new bark from the sides. The latter is often the most practicable way to arrange it.

Potato Blight.

TO THE EDITOR:—Can you give me a recipe for spraying early potatoes? Some patches of potatoes in blossom now appear black in spots; the leaves are black as coal; some stems are the same; then again some vines have only a few black leaves. What is the cause and will a spray help the spuds?—AN OLD SUBSCRIBER, Watsonville.

It is potato blight, a fungus which was formerly escaped only by changing variety and choosing those which resisted it. It can be checked by spraying with the Bordeaux mixture and the use of it now will probably save part of the crop. Next year you must look out for the first spot and spray at once. It is still often a great advantage to try new varieties of potatoes, as old ones seem to run out.

Orange Trees Diseased at the Base.

TO THE EDITOR:—Orange and lemon trees, having been planted five years, seemed thrifty the first two or three years and bore one fair crop; some of them then became diseased just above the ground, the bark in some cases dying entirely around the tree, in other cases partly around—the former dying, the latter making no growth, in fact, shrinking away, and will die. Will you kindly state the cause and remedy?—SUBSCRIBER, Menlo Park.

It is most probably due to allowing irrigation water to stand around the base of the tree. Water should always be prevented from coming into direct contact with the bark. Where injury has not gone too far, a tree can be saved by scraping away all diseased tissue, washing with dilute carbolic acid and bandaging.

Macaroni Wheat.

TO THE EDITOR:—Hard or horny wheat, as described, has "rather small, elongated and very hard

grains; the palea have remarkably long awns and the leaves are very broad. It is much cultivated in the countries near the Mediterranean and yields a good crop on comparatively sterile soils." The broad leaves spoken of would suggest that it would be a valuable variety for hay in California. Can you tell me whether it has been tried for that purpose and with what success, and also where the seed can be bought?—C. QUEEN, Fish Rock.

The broad leaves are all right, but the long awns are commonly called beards and are decidedly objectionable in a hay plant. These Mediterranean hard wheats are all bearded like brigands, and for that reason are not widely grown.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 4, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

SACRAMENTO VALLEY.

Northerly winds in some sections have dried pastures, and sheep and cattle are being driven to the mountains for green feed. In other respects the conditions have been very favorable for grain and fruit. Wheat is filling out well, and will soon be ready for harvest; there will be a heavy crop. Barley harvest has commenced in places. Haying is still in progress, and nearly completed in some sections; the yield is equal to the average and the quality excellent. Deciduous fruits continue in good condition. Cherries from the Vacaville district are nearly all gathered; the crop proved excellent. The first shipment of pears to the East was made during the week. Olives are setting well. Alexander peaches are in market.

COAST AND BAY SECTIONS.

Conditions have been generally favorable for grain and fruit, though in some sections it is reported that the dry northerly winds have materially affected the yield and quality of grain. Good crops of wheat and barley are still probable, and in some of the northern counties the yield will be fully up to the average. Harvest is in progress in some places. Haying and baling are progressing throughout the district; the yield is fair. Corn is making good growth. Hops are backward, and in some places the outlook is said to be very poor. Pastureage has dried rapidly during the week. Light frosts in portions of Sonoma county injured tender vegetation. Deciduous fruits are ripening, and will yield a good crop in most sections. Grape vines are thrifty.

SAN JOAQUIN VALLEY.

Clear and warm weather, with cool nights and light north wind has prevailed during the week; these conditions have been very favorable for all growing crops. Haying is completed and some shipments are being made. Alfalfa is doing well. Grain harvesting has commenced and prospects are favorable for a large crop. In some localities there has been slight damage from rust. Grapes are making a rapid and healthy growth, and the indications are for large crops of all varieties. Fruits of all kinds are progressing nicely and large crops are anticipated. Some apricots are being dried. Vegetables are reported backward in some localities. Water supply is plentiful.

SOUTHERN CALIFORNIA.

Nearly normal temperature has prevailed during the week, with considerable cloudiness. Haying continues, and baling has commenced; some sections report a fair crop. Vineyards are looking well and give indications of a good yield of the different varieties of grapes. Deciduous fruits are making slow progress; in many places peach and prune trees are still without foliage. Apricots are also backward; the fruit will be small and the yield light. Berries are more abundant than usual. Walnuts are improving. Lemons are ripening slowly in the vicinity of San Diego.

LOS ANGELES SUMMARY.—The weather has been favorable for summer crops. Deciduous fruit is still backward. Peach, apple and pear trees are leafing slowly. Haying continues; the crop, while light, will be better than anticipated.

EUREKA SUMMARY.—Oats, corn, potatoes and grain are making good growth, but conditions are unfavorable for cherries, strawberries and small fruit generally.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, June 6, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Minimum Temperature for the Week.....	Maximum Temperature for the Week.....
Eureka.....	.00	50.02	25.30	43.77	48	58
Red Bluff.....	.00	22.87	21.55	26.17	58	100
Sacramento.....	.00	20.28	15.00	20.19	50	100
San Francisco.....	.00	18.42	16.81	22.34	46	74
Fresno.....	.00	10.14	7.78	8.76	50	100
Independence.....	.00	3.66	1.58	4.59	56	90
San Luis Obispo.....	.00	17.30	17.33	16.79	48	80
Los Angeles.....	.00	7.88	5.58	17.18	52	78
San Diego.....	.00	5.98	5.24	9.38	56	88
Yuma.....	.00	1.29	1.34	2.89	64	104

HORTICULTURE.

Frost Fighting for Fruit.

By ALEXANDER MCADIE, Forecast Official of the U. S. Weather Bureau at San Francisco, in Bulletin 29 of the Bureau.

For the past four years the Weather Bureau office at San Francisco has given much attention to the question of protecting the citrus fruit crops of California, particularly of the section south of the Tehachapi, from frosts. It has been estimated that the value of the citrus fruit crop for this section during the year 1899 was in the neighborhood of \$7,000,000. It will be readily seen that even if so low a proportion as 5 per centum of the crop should be lost through frost, the amount involved is still so considerable as to warrant a systematic study of the problem and an endeavor to devise methods minimizing this loss. The problem is of a twofold nature; first, accurate forecasting of the frost period; second, efficient methods of raising the temperature at critical times. The Weather Bureau office at San Francisco has demonstrated beyond criticism that frost can be successfully forecast. Certain fruit growers—and particular credit should be given to the Riverside Horticultural Club for its work in this direction—have both devised and tested methods of smudging, irrigation, heating, covering, etc., of great practical value.

CALIFORNIA FRUIT CAN BE PROTECTED.—The experience of the past three years warrants the statement that the loss due to frosts in California, hitherto considered unavoidable, can be prevented, and that unless extreme conditions, by which is meant lower temperatures by 5° than have ever yet been experienced in this State, occur, the citrus fruits of California can be successfully carried through the period when frost is likely.

FROSTLESS PLACES.—It should be noted at the outset that in many sections for some years past, it has been the practice to call certain areas frostless. Many of the foothill sections are advertised as regions in which frost has never been known to occur, but such statements must be received with caution and reliable records insisted upon. For reasons which will be given later in connection with the matter of "air drainage," it is plain that places which are exempt from frost one season may be visited with frost at another time and that a slight shifting of the lower air currents is responsible for much of the streakiness so characteristic of frost. The surface drainage of the air is not a fixed condition and consequently a region which is frost free under some conditions may be visited with frost when these conditions are slightly altered. In general, then, no section in districts where frost does occur is to be considered as frost proof.

AIR DRAINAGE.—The chief result of the work in California during the past four years is the establishment of the principle that the formation of frost is primarily a matter of air drainage. The principle is shown both in the general pressure distribution over the southwest portion of the country during frost periods, and on a smaller scale in the motion of the surface air currents in certain small areas. A composite map showing the conditions preceding frost was prepared in December, 1899. A relief map of southern California used in connection with the pressure map will show that the air moving from the north through El Cajon pass, or over the San Bernardino mountains, drains southwestward into the districts which are the center of the citrus fruit industry in southern California. When this cold, dry air settles in these lower lands, the temperature near the ground about the time of sunrise will range from 22° to 32°. An important relation, first pointed out by Prof. W. H. Hammon, for forecasting frosts for southern California is this: A wave of falling pressure passes from Montana or Idaho southward across Utah and westward through southern Nevada, thence into Arizona or southern California, and if followed by a rapid rise in pressure, is generally the forerunner of much colder weather in the southern citrus belt. In other words, the usual warm lower air strata are vigorously displaced by cold, dry air; and when the draining ceases and cold air settles during the period of comparative stillness, frost forms. What is true on a larger scale is true on a smaller scale, and a close agreement exists between frost belts or frost streaks and areas of stagnant, cold air. An attempt has been made to plot the channels of air motion and the frost streaks in certain districts. Mr. Frank H. Olmstead, acting for the Los Angeles Daily Times, surveyed the frost localities in Los Angeles, Riverside, San Bernardino and Orange counties. The survey was necessarily a hurried one; but the correlation of frost streaks and stagnant air was evident. A careful survey should be made by every ranch owner. The writer has urged this matter, believing that each grower must work out his own salvation, and that besides studying and practicing methods of protection, it is necessary to be familiar with the air drainage of the ranch. In nearly every ranch that the writer has visited there have been certain well-marked cold spots which, in most cases, were found to correspond

with slight depressions in the ground. These three deductions can be drawn from what precedes: (1) Where the air is in brisk motion damage from frost is generally light. (2) Stagnant air, such as exists in low valleys, basins and inclosed areas, favors frost. (3) As the coldest layer is generally near the ground, it is sometimes advisable to drain downward upper, warm air, displacing surface layers.

ATMOSPHERIC MOISTURE.—In studying frost formation it must be remembered that if there is little aqueous vapor there will be but a small quantity of frost. The temperature of the air, however, may be sufficiently low to seriously injure vegetation. This explains why with low temperatures and low dew-points in certain regions, especially where the radiation of heat is very rapid during the night hours, there are no frosts. It is too dry. Conversely, high dew-points and much moisture in the air sometimes are followed with heavy frosts, although the air temperatures range between 40° and 45°. These points are mentioned to answer the questions which are often propounded, why with low temperatures there is no frost; or why there is no frost one morning and there is frost on a succeeding morning when the temperature is perhaps higher. Distinction must be made between the deposition of the moisture in the air and the temperature of the air itself.

METHODS OF PROTECTING.—Every fruit grower should put himself in communication with the nearest center of distribution of weather forecasts. If possible he should be in daily communication with some Weather Bureau office. Whenever frost warnings are issued for his locality he should carefully determine the temperature and dew-point, as elsewhere described, frequently during the late afternoon and night. A good outfit consists of a metallic thermometer so arranged as to automatically close an electric circuit and ring an alarm whenever the temperature of the air reaches 32°. In addition to a reliable sling psychrometer there should be some small device for testing the motion of the gentle air currents in the orchard. Too much attention cannot be given to this question of air motion. Many smudging devices have failed to be effective because of a slow movement of the smoke away from the orchard.

PROTECTIVE METHODS BASED ON MIXING THE AIR.—It is well known that lowlands are visited with frost while hillsides and hilltops escape. Every fruit grower should study the topography of his land and plant accordingly. Wind-breaks are, as a rule, considered detrimental. No hard and fast rule, however, can be laid down. On a well-known lemon and orange ranch at Santa Paula, the property of Mr. N. W. Blanchard, there are several large wind-breaks which have proven themselves to be of the greatest benefit in protecting fruit from frost. It would almost seem as if the citrus trees within a distance of 50 feet were directly protected by these wind-breaks. By planting a wind-break in the proper place, defects in the topography may be overcome and air currents established where otherwise pools of quiet air would have formed. A wind-break dense enough and so situated as to interfere with any natural circulation and facilitating the formation of still areas or pools would, of course, prove injurious.

PROTECTIVE METHODS BASED ON WARMING THE AIR.—A large number of small fires, advantageously placed, will raise the temperature of the air several degrees. The Riverside Horticultural Club, testing the various methods which were in use in California, came to the conclusion that wire baskets suspended a few feet above the ground, and holding several pounds of coal or charcoal, made an efficient protector. This method was described by Mr. Edward Copely, of Riverside, Cal., in several articles published in the Riverside Press of April, 1896. The cost of the wire basket is about 10 cents, and if forty baskets be used to the acre, the cost of fuel will hardly exceed \$2.50. To this must be added the cost of labor during the night and succeeding day in refilling the baskets. This method meets with most favor in southern California. The temperature can be raised certainly 3° or 4° with from twenty to forty of these baskets to the acre. It has been suggested that a number of small oil lamps be used with success for this purpose. Oil pots have been used and make a hotter fire, but the deposit of lamp black upon the fruit is objectionable. Some cheap modification of the ordinary plumber's furnace might possibly be devised which, by means of a moderate blast, would produce a high temperature.

PROTECTIVE METHODS BASED ON CLOUD OR FOG BUILDING.—Damp straw, old wood, prunings, manure, etc., when burned briskly furnish an effective smoke, and if the material while burning is doused with water, the result is a dense steamy smoke, which, while trying on human lungs, serves as a screen to prevent loss of heat by radiation and as a barrier between the chilled fruit and a sudden application of heat at the time of sunrise. Wet smudging has been tried in many ways with varying results. There are many reports of failure, and on the other hand, some definite results, showing the good accomplished by this method. Here, as in all other methods of protection, much will depend upon a careful study of the local conditions. Many a farmer smudges so that some neighbor gets the benefit of his work while his own fruit remains unprotected. All motion of the air should be noted carefully, and this is some-

times difficult where the smoke is very dense. In some orchards sacks of old straw soaked with oil are so distributed as to be available for quick lighting. Portable smudges have also been devised. Mr. Priestly Hall has made an efficient form of sled operating under the wet smudge principle. Upon a sheet-iron sled he has placed a small fire box, consisting of a grate 4 or 5 inches above the bed of the sled, over which pass iron rods bent in the form of an arch, leaving a space for the fire about 14 inches in diameter. This fire box is inclosed in a large corrugated iron box, which has the bed of the sled (about 3 or 4 feet in size) for a bottom, and sides 30 inches high. A door is made in front of the corrugated box to admit fuel to the fire. The box is filled with wet straw or manure and a fire is maintained in the fire box when the machine is in operation. The cost is about \$12; one will do for ten acres.

PROTECTIVE METHODS BASED ON IRRIGATION.—Of all methods proposed for the protection of fruit, excepting wire baskets, irrigation has the largest amount of evidence in its favor. It has been tried in many different places with different crops and has generally given satisfaction. Where water is not very plentiful, and this is the case strangely enough in some fruit sections, the method may not always be practicable, but with this exception there are many decided advantages in the generous use of water. Injury from frost depends almost as much upon the condition of the tree as upon the severity of the weather. Critical periods in the life of the tree can be controlled to some degree by the use of water.

Some fruit growers hold that heat is the one thing that is desired at times of frost, and that the best method is that which produces heat by the simplest and least expensive process. Water, owing to its high specific heat, forms an excellent agency for the temporary storage of heat energy. We have seen that in the wet smudge an attempt is made to utilize the latent heat of vaporization, and theoretically this has always seemed the most advantageous method. A modification of the wet smudge is steam piped through an orchard. This experiment was made by the Wright brothers at Riverside, Cal., with a 35 H. P. boiler and a main pipe 2 inches in diameter, from which, at right angles every 40 feet, pipes 3/4 inch in diameter were extended. It is claimed that the temperature was raised 3° whenever the steam was turned on. It is also said that the coal consumed would not be more than the amount used by the basket method. The estimated expense per acre would not be more than \$75.

The latest device for the protection of citrus fruit against frost combines the good effects of irrigation with heating. This is a method known as the warm water method, tried at Riverside this year. An account of the experiment follows:

EXPERIMENT OF MR. ERNEST A. MEACHAM, RIVERSIDE, CAL.

On the morning of February 9, 1900, at the Meacham ranch, a test was made of the Meacham warm water method of protecting citrus fruits against frost. The experiment began at 3:45 A. M., and was conducted in the presence of a number of gentlemen belonging to the Riverside Horticultural Club, nearly all of whom were orange growers.

At 6:30 A. M. the temperature of the ground 100 feet or more away from the boiler was 32°. The plant consists of a 12 H. P. tubular horizontal boiler, laid in a brick furnace, and arranged to deliver water with or without pressure. Cold water enters the bottom of the boiler and is delivered from the top orifice directly into the flume. The fuel used was crude petroleum, of which about fifty gallons were used in three and one-half hours. At the rate of fourteen gallons an hour and an estimated cost of a little over 4 cents per gallon, the actual expense of fuel for the experiment was about 60 cents per hour. The oil is burned with a steam jet under pressure. A secondary 6 H. P. boiler, carrying 70 pounds of steam, was used. The oil is thus entirely consumed and makes but little smoke. The whole arrangement is such that not more than two men would be required to attend to all the details.

Fifty minutes from the time of beginning, the water, which had an initial temperature of 55.4°, was raised 30°. Two sets of temperature records were made, one by Mr. Priestly Hall and the other by Mr. McAdie. In Mr. Hall's test 8 inches of water was run in fifty furrows, which barely ran the water past the ends of the furrows. In the second case 8 miner's inches of water was delivered into twenty-five furrows, thus carrying the heat farther down the furrows than in the first experiment. The data obtained by Mr. Hall were as follows: 5:30 A. M., normal temperature, 34°; normal temperature of water, 60°; temperature of heated water, 92°; at the flume, 92°; 20 rods from the flume, 58°; 40 rods, 52°; temperature of unheated water 40 rods from the flume, 41.5°; vapor condensed on trees early in the morning and more condensed on the trees in the heated plot.

Mr. McAdie's records are as follows: Time, 6:30 A. M., air temperature varying from 34° to 36°; temperature on ground, 32°; frost was observed on grass blades; initial temperature of water, 55.4°; heated water delivered to flume at 85.2°; in a straight line down a furrow 200 feet from a boiler in the direction of the wind (motion of the air was very gentle) there was a fall in temperature of 14.2°; water vapor was observed rising to a height of about 4 feet; 200 feet from flume, as stated, the temperature of the water was 71°; temperature of the surface soil 4 inches right and left of the water was 43°; temperature of the soil 16 inches from the water or in the middle of the ridge, 42.2°. It is presumed that the temperature of the ground had no water been flowing would have been 33°, and it would seem as if the soil itself was warmer by nearly 10°. At the end of a furrow, 660 feet,

the temperature of the water was 54°, or there had been a fall of 31° in 40 rods; the temperature of the ground 4 inches from the water, 38°; 16 inches from the water, 36°; temperature of unheated water 50 rods from the flume, 40°.

The approximate value of the plant was \$200, and it is estimated that for a plant all equipped sufficient for a ten-acre grove \$600 would cover all expenses.

SPRAYING.—After frost, or rather just before a frost has ended, a spraying device can be used to advantage. Its chief function is to prevent a too rapid warming of the chilled fruit. It is said by horticulturists that even the light coating of ice formed in this way does not seriously damage the fruit. It is very likely that the latent heat of solidification set free by the change from water to ice may play a helpful part; but the chief effect is to prevent a too rapid thawing. In other words, both heat and water should be supplied to the chilled plant slowly, and according to the plant's ability to make good use of the same. At the A. J. Everest ranch at Riverside, Cal., a portion of the grove is protected by sprinklers at the top of 50-foot masts.

PROTECTIVE METHODS BASED UPON SCREENING OR COVERING.—All screening or covering devices are in effect modified hothouses, and there is no question but that a thorough protection can be accomplished. The expense is the one objection. Screens are made of light materials, namely, canvas, muslin or light woodwork, and have been used with considerable success. At the A. J. Everest ranch an elaborate structure of lath screens is in use. There is no question as to the value of the protection, but the expense is considerable, averaging perhaps \$400 to the acre. The lath covering may be considered as forming a well ventilated hothouse.

THE FIELD.

Uses for Cyanide Poison.

The use of hydrocyanic gas has become so common in southern California through its success in fumigating orchards, to kill insects which cannot be reached by liquid treatment, that we doubt not many of our readers will be interested in other uses of the poisonous gas. Prof. W. G. Johnson of the Maryland Experiment Station recently gave the Rural New Yorker a very interesting account of his experience in fighting vermin infesting farm buildings. We shall take several paragraphs from his narrative:

IN VARIOUS ENCLOSURES.—I have great confidence in the use of this gas in mills, granaries, storehouses and other buildings for the destruction of insect pests and other vermin. Last fall I was showing a nurseryman how to generate the gas, and, not desiring to waste the material used, asked him if he did not have a granary or shed where I could place the chemical, thinking, perhaps, I might destroy some insects that were secluded in cracks and crevices. The building was a two-story wooden structure, reasonably tight. The ceiling and floor were close. The upper part was used for a workshop and general storeroom, while the lower floor contained four large bins for grain, two on either side, leaving a space about 12 feet between them as a driveway. Two bins contained Indian corn, and two were about half filled with wheat. We laid some old bags and blankets over the stairway leading into the upper room, put the sulphuric acid and water in an old crock, dropped the cyanide in it, closed and locked the outside door. What we saw the next morning was surprising. The first thing to meet our eyes was a dead mouse near the door. We then began to look for dead insects, and were not disappointed, as the floor was literally covered, in many places, with the saw-toothed grain beetle (*Sylvanus surinamensis*). Near the granary doors they were actually piled up. On the floor, where there was a crack in the casing or siding, their dead bodies were found by thousands. Even along the casing of the outer doors they had come out of their hiding places and dropped dead. It was a complete surprise to me, as I had not seen a single insect in the building the day before, when the gas was liberated. You can imagine the satisfaction it gave the owner to see the floor covered with the dead carcasses of these destructive little denizens, and he declared that the operation had been worth \$25 to him.

Its application in mills was the direct outcome of this experience, and I made the first practical test in a three-story brick mill, 72x40 feet, in Pennsylvania, badly infested with weevil, June 10, 1899. A second test was made in an Ohio mill June 29, 1899, which was overrun with the flour moth. In both instances the results were gratifying. The Quaker miller wrote: "We used the chemicals as directed, and are convinced that through the use of this gas we can retain possession of our mills." The Buckeye miller said: "I send you by mail sample of web, moth, weevil and bugs the gas destroyed. I wish to thank you for what you have done for me, and tell you that the experiment was a grand success." I made a careful examination of the material sent, and found seven species of dead insects in it. Less than two weeks ago we directed the fumigation of a large

Canadian mill, in which we used 152 pounds of cyanide at one time. This was perhaps the largest amount of cyanide ever used at one time in a single building. We will report the outcome of this enormous charge at some future time.

There is not the slightest danger of this gas injuring grains or the manufactured products, either for edible purposes or for germination. My colleague, Dr. Charles O. Townsend, State Pathologist, has determined these facts, and will soon publish his results in bulletin form. The method of applying gas in mills and granaries is the same as in greenhouses and other inclosures. The capacity of the mill is determined and .20 gramme cyanide per cubic foot is used. The building is closed as tightly as possible, and the crocks are set at various places on the floors. The cyanide, in packages of equal weight, is suspended over the crocks by means of a string, so arranged as to be lowered at one time from the door leading outdoors or into the floor below. In fumigating a building of more than one story begin on the top floor, as the gas is lighter than air, but very diffusive, and the operator must, therefore, get out as quickly as possible. After the charge is set off on the top floor come down rapidly and fuse the next floor, and so on down.

A DEN OF RATS SUFFOCATED.—It is not an uncommon thing to have old buildings overrun with rats and mice. Where it is possible to confine the animals to the room I would give them a dose of gas (.25 gramme per cubic foot). I cannot do better than cite an instance that came under my observation three years ago. A brick smokehouse on an old colonial estate was a veritable rat den, and a source of great annoyance to the owners. I was called to diagnose the case and suggested gas. The plans were laid, but how to get the creatures out of the burrows in the ground was a perplexing problem. We decided to stop up all holes leading outside, and starve the occupants for two or three days. This having been accomplished, one evening in June we opened the door and scattered a half bushel of Indian corn over the floor. In the meantime a large snuff jar was placed near the center of the room, in which was poured the acid and water. The cyanide was then suspended over the jar and the string passed out of the door. The door was closed and strips of paper pasted over the cracks, as it was rather open. Ten minutes later we heard the piping and squealing so characteristic of hungry rats. We waited half an hour and then gradually lowered the cyanide, which was hidden in the top of the tall jar. The door was not opened until the next morning, and when Tim, the handyman, had gathered up and laid the rats side by side we counted fifty-seven, old and young. Tim's face lighted up as he exclaimed, "Boss, we's got every rat on de place!" And, indeed, it did look as if we had every one, certainly every one that was in that house. How many got back into their dens we will never know, for they never came out again.

IN DWELLING HOUSES.—I hesitate in recommending the general use of this deadly gas in private houses, but it can be used to good advantage at times. A prominent professor in the service of the United States Department of Agriculture told me not long ago that he used this gas successfully in a house in Florida he occupied a short time while making some investigations, which was overrun with bedbugs. He said it brought them out of their hiding places in a hurry to certain death. I know of still another instance where a summer cottage had become overstocked with fleas, and after two or three applications of the gas, at intervals of a week or ten days, "the tenants abode in peace." I am also of the opinion that it can be used to good advantage in hen-houses, but perhaps frequent application would be necessary for a time. The chicken mite would be more difficult to destroy than the ordinary louse. In applying the gas in this manner darkey Tim would say, "Boss, be suh an' hev your chickens on de outside roost."

THE DEADLY CYANIDE.—The cyanide of potassium used for generating this gas is too terribly dangerous to be trifled with. It is almost snow white, and, in fact, resembles lump sugar. A piece of it the size of a pea would kill a man so quickly he would scarcely know what had happened. Animals eating it are killed almost instantly. In my experiments in 1897 the lumps were too large, and I broke them by folding them in an old fertilizer bag to keep the pieces from flying. The cyanide was then shaken on a paper, and, as a final precaution that none was left in the bag, I shook it out of the window. Two fine, large chickens, especially prized by their owner, were roaming about the yard. In a few moments I saw one of them on its back, kicking, and a little later the other one was in a similar condition. They had picked up some particles of cyanide not larger than pinheads, shaken from the bag. Prof. Lounsbury says: "I have repeatedly inserted small particles of cyanide in bits of dry meat and laid them as baits for feline disturbers of his evening labors, and I am not exaggerating when I say that, as a rule, the creatures dropped almost instantly, and often with the meat still in their mouths, seldom dying more than 2 or 3 feet from the bait." I simply cite these instances to place my readers on their guard. Gunpowder, nitro-glycerine, etc., are dangerous substances, but they are handled every day with impu-

nity, as we know them. If you have cyanide around label it poison, and keep it in a tightly-closed can, and away from children and other persons who might, through curiosity, wish to taste it.

The gas itself, generated from cyanide, has an odor characteristic of peach pits, but I would not advise you to put your head in an inclosure to sample it. Keep out of the building until it has been thoroughly aired for an hour or more. The gas is very diffusive, and quickly leaves a room when there is an opening for its escape. In mills and other buildings some arrangement should be made for lowering a window or opening a door from the outside.

THE APIARY.

Pollination the Best Work of the Honey Bees.

By PROF. A. J. COOK, in the American Beekeepers' Journal.

The castor oil plant is a very beautiful and a most interesting plant. The rich color, the vigorous habit, the finely cut leaves, and, perhaps, most of all, the curious bloom, can but attract and greatly interest any who give it careful attention. It is one of those plants that cry out in its very structure in loudest praise of the mission and work of the honey bee. I now have very interesting classes of thirty-eight who are studying these things, and all have studied this plant with enthusiastic interest. Bee keepers may well feel very kindly towards this plant, for it is always praising the bees. The flowers are in a crowded raceme, almost a spike, and with the similarly colored leaves of rich, brownish red, are most pleasing to look upon.

The most interesting thing of these flowers is the fact that they are monœcious. By this we mean that the pistillate flowers—those that have only pistils and bear the seeds—are separate from the staminate ones, or those that bear only stamens, and, of course, can never bear seeds. These flowers are not only on the same plant, as is the case with all monœcious plants, but in this case they are in the same flower cluster. In many plants like the willow the staminate and pistillate flowers are on different plants. These are called diœcious.

In the plant in question, the pistillate flowers are at the tip of the flower cluster, and open before the other flowers do. Thus these flowers are pollinated before the basal or staminate flowers open. Thus the pollen for which they hunger must come from other flowers. Before the closely neighboring and as closely related staminate flowers are open at all, they are well along in the race of development. The staminate flowers do, however, aid the others indirectly, as they are rich in color, and are a signal to the bees that here is rich nectar for them, and that they can not afford to pass it by. Later, after the seeds have developed quite considerably, the staminate flowers open and offer to the bees their rich stores of pollen, which is thus borne off to other pistillate flowers to fructify other ovules, or embryo seeds, that they may push on towards fully developed seeds.

Two important truths are gathered from this interesting plan of the castor oil plant: First, the waiting pistillate flowers would starve for the needed pollen and come to naught, were it not for the kindly ministries of nectar and pollen-loving insects, chief and by far the most important of which are the honey bees. The ovules, to develop, must have pollen, and that must come from other flowers, perhaps from a long distance away. The other point is equally patent: "Nature abhors close fertilization." She enforces cross-pollination in case of the castor oil plant. She does the same in more emphatic words in case of all diœcious plants like the willow, oak and walnut. Here the pollen must come from other—very likely, far distant—plants, and the aid of bees is still more imperative.

In many hermaphrodite plants, where the stamens and pistils are side by side in very close proximity in the same flower, as in case of many pears, apples and other fruit, the same law is announced in the fact that these fruits are sterile to their own pollen. We find the same truth proclaimed in the higher, animal realm. Closely inbred cattle are more ready to contract disease, like consumption, than those not consanguineous. The laws in some States against intermarriage of near relatives is not the creature of a nervous imagination. Ask Nature and she will say "Don't."

Close investigation, carried on by myself and many others, has shown that this necessity of cross-pollination is very general. With most of our valuable plants we can not hope for full fruitage unless there is opportunity for this cross-pollination. In many cases the cross-pollination must be provided for or there will be no crop at all. I have a case in point: A sister living on the Sacramento river has a large and very productive orchard of pears, apricots, cherries and prunes. I visited her in 1891 and she asked me regarding the reason that her orchard was producing less than formerly. The trees bloomed heavily, but the fruit did not set. I asked if there were not more bees formerly than at that time. She thought herself and answered yes. I said: "When good, vigorous trees blossom heavily and do not fruit

well, always suspect lack of pollination." She at once engaged an apiarist to move his bees to the place, and at once received marked benefits. She has kept the apiary there ever since. She feels that she can afford to pay for the presence of the bees, and she is right.

I visited her the other day and, upon examination, it was found that trees in near proximity to trees of other varieties were setting far more freely than those farther off, and the decrease was very marked. This was a very graphic object lesson. I have no doubt but the annual loss from the absence of bees and the planting of varieties in solid blocks is tremendous. We have our orchards in great proportion, often hundreds of acres in one place. Indigenous or native insects can not do the large work of pollination, and we must bring the bees to the rescue. No doubt "Good cultivation" may well be the motto of the orchardist, but close alongside should be the second one, "Mixed varieties and the honey bee."

FRUIT MARKETING.

Crop Reports and Prices.

SAN LEANDRO, June 2.—The Alameda District Fruit Growers' Association, at a meeting held here this evening, appointed a committee to interview fruit buyers in Santa Clara as to the prices they might expect to secure for apricots and pears. The fruit combine has made the Alameda county growers offers ranging from \$20 to \$25 per ton for apricots of various grades and \$16.50 per ton for Bartlett pears. The directors of the association will, if they can secure better prices from Santa Clara canners, contract to ship their fruit there. If they fail in this, they declare they will dry their crops. The committee in charge of the matter is composed of E. K. Strowbridge of Castro valley, E. J. Holland of San Lorenzo and D. McCarthy of San Leandro.

NILES, June 1.—E. A. Ellsworth of Niles, one of the largest orchardists in this county, is authority for the statement that the apricot and prune crops of Alameda county will be record breakers, on account of the prolific bearing qualities of the orchards. It is calculated that there will be between 3000 and 3500 tons of apricots alone, but this immense crop does not necessarily mean a harvest to the growers, as \$20 a ton is the highest price that has yet been offered. Orchardists have declined to make contracts, declaring that prices cannot possibly get lower than 1 cent a pound. They have announced their intention of drying their crop before selling at low prices, and already the driers have made contracts for as much as they can handle.

YUBA CITY, June 1.—For several months there has been much speculation among the fruit growers as to what prices the canners would offer this season, and until a few days ago it was all guesswork with them; but finally the canners in the new association and outside sent out their schedule of prices, which, as a basis, is \$22.50 per ton for clings and \$15 for freestones, or from \$5 to \$7.50 per ton lower than last season. This price varies as to varieties, Phillip clings being quoted at \$25 and choice freestones at \$17.50. Pears are placed at \$17.50 to \$20, according to size. The above prices are for 2½ to 2½ inch fruit, smaller sizes being less. No price is given on apricots or plums. The canners assert that these prices are based on the present canned-goods market and the large fruit crop throughout the East, as well as in this State. The growers, while contending that the prices are too low, realize their disorganized condition and inability to maintain a combine of their own, and have generally accepted the prices, and several thousand tons have already been contracted for by the three canneries in this vicinity. As a rule, the cling crop in this county will not be very heavy, but the thinning has been carefully done and the size will be excellent from the present outlook. The growers will probably market as

many 2½ to 2½ inch peaches this year as last. It is very likely that, notwithstanding the lower prices at the canneries, the bulk of the peach crop will be canned and drying not done so extensively as last year.—Farmer.

THE VETERINARIAN.

Answers by Dr. Creely.

TREATMENT FOR INJURED TEAT.

TO THE EDITOR:—I wish your advice regarding a heifer with first calf; has been giving milk about three months; one teat discharges bloody matter with milk and has lumps inside that work up and down when squeezed. If anything can be done to cure her, will you be kind enough to advise me what to do?—A SUBSCRIBER, Orosi.

Inject a teaspoonful of peroxide hydrogen two times daily; apply tincture iodine externally once daily.

REMOVING WARTS.

TO THE EDITOR:—How can we best and most conveniently remove the warts from a cow's teats?—SUBSCRIBER, Los Angeles county.

Remove with scissors, after which apply once daily stick silver caustic until cured.

A TEST FOR GLANDERS.

TO THE EDITOR:—Is the fact that phlegm from a horse's nostrils sinks in water certain proof of glanders? If not, is there any test which an inexperienced person can use?

I have a cow which tore a teat on barbed wire, opening milk tube. As she is giving a large quantity of milk, was unable to keep it from escaping through cut, and the wound has healed with an opening. Can this teat be dried without drying the others?—A. S., Elk Grove.

The sinking of discharge from horse's nostrils is no sign of glanders. The mallein test is considered a perfect test as well as a preventative. First, get the horse's temperature normal, 100° F.; inject under the skin 2 c.c. mallein; six to twelve hours later take temperature again; if the horse has two or more degrees of fever, it is a sign of glanders.

You can not safely dry the teat without being dangerous to the other glands.

UDDER AILMENTS.

TO THE EDITOR:—I have a fine Jersey heifer that has an opening on the side of her teat. Is there any way to stop the hole, as she has the appearance of a fine cow?

I have a graded Jersey that gives bloody milk after her second calf. We dried her off about six weeks before her time, and we noticed some hard lumps in her bag the last time we milked her. When she came in her bag was badly swollen and apparently filled with lumps, and her milk was red and, when set, blood would settle in the bottom of the pan. The hard lumps still remain. She has been giving milk some four weeks and the blood still shows in the bottom of the pan. Otherwise she has the promise of making a fine cow.—G. C. PACKARD, Santa Barbara.

Cut around the opening to create a raw surface and sew tightly together with catgut.

Milk the teat gently, wash out with 1% carbolic acid, after which inject pyrozone two times daily.

E. J. CREELY, D. V. S.
510 Golden Gate Avenue, S. F.

FLORIST AND GARDENER.

A Treatment for Tomato Troubles.

TO THE EDITOR:—Concerning tomato troubles in your edition of June 2nd, two correspondents desire a remedy for their vines wilting, turning yellow and dying. In this section we had the same trouble last year, and it again threatens us this season. The following remedy has been tried with some apparent success by a neighbor, which I hasten to submit to your subscribers: Obtain coal tar from the gas works, then take a swab or small brush and smear it over the main stems of the vines. After this treatment the aphids vanish, thus doing away in a large

measure with the infection carried by insects to healthy vines.

I examined some vines yesterday that had been subjected to the tar treatment a week ago, and found an entire absence of aphids—in fact, of all insects—and the vines in nowise injured by the application of this remedy. I noticed on some of the vines that had wilted before the tar was put on some evidence of a fresh growth between the branchlets. However, I think it might be best to follow the suggestion of the editor and destroy all sickly vines, thus minimizing the risk of healthy plants contracting the disease. I would also suggest that the tar be applied only on the side of the stem not exposed to the sun, especially of those vines not well shaded with foliage. Last evening I went over all my healthy tomato vines with the coal tar. The insects most certainly have a marked antipathy to the tar odor, there being no living insect in sight the following morning. This was apparent also with some vines which I experimentally sprayed with a one in twelve solution of carbolic acid. I should like to hear with what success or failure your several subscribers meet with in saving their tomato vines.

Merced.

A. R. GURR.

CORRESPONDENCE.

Notes on Fruit Growing in Italy.

A prominent Riverside fruit grower kindly sends to the PACIFIC RURAL PRESS some pages from a letter of his son, who is now visiting leading fruit regions of the old world. The following is written from Sorrento, Italy:

After doing Pompeii, we started on one of the most interesting carriage drives I ever had, by way of Costellamare, along the splendid roads through the terraced vineyards and orange groves (or gardens rather, for there is nothing here to compare at all with our Riverside orange groves) to Sorrento. The road leads through many little towns swarming with people. It was a holy day and no work going on. The roadway is much narrower than Californians consider necessary, but splendidly kept. Piles of broken stone are all along, ready to promptly mend any broken place. Passing Castellamare and Meta we came to Piano di Sorrento, a suburb of the City of Sorrento. Here I found the U. S. Consular Agent, Sig. Francisco Ciampa. He is the head of the firm of F. S. Ciampa & Sons, exporters of oranges and lemons. Mr. Ciampa was at his villa, and on presenting my credentials, received me very kindly, and we had a long talk. He showed me his grounds and orange trees, and said just what the officials in the Department told me in Washington, that a Californian had nothing whatever to learn about orange growing in Italy.

The orange trees here are set out "hit or miss." There is no regularity, and oranges are in a great mess of other kinds of fruit trees. All the work is done by hand. Mr. Ciampa told me that even if it was possible to have an orchard laid out so as to be possible to work it by horses, it would not do to use that means because of the swarms of poor laborers depending on the land work for employment. The regular wages here is 1 lira—20 cents—a day. These laborers live on bread and macaroni, beans and chestnuts, mostly. Meat is out of the question. They get a little wine—stuff that an American pig would turn away from.

Mr. Ciampa took me to a part of his garden or fruit patch which he had recently bought, and is replanting. After clearing off the old jungle of trees and vines, it was being dug over by hand, 4 feet deep, all roots and stones being carefully picked out. He is planting this to budded seedlings, of his own raising. These nursery trees he showed me. They were budded into stock about an inch thick, which he said were six years old. At least they are old enough to be well mossgrown. The buds grow from four to five years before he cuts the old tops off. It was in this new part of his orchard that he detained me longest, for he was very

particular in asking just how we propagated the orange tree in California. He was slow to believe that in four years from the seed we had a tree ready to plant, and I had to explain each step in the process several times. Then he showed me his flowers and his tools. He keeps the tools on top of one of his library cases. He wants one of those heavy pruners that we use for cutting off suckers sent him from America.

He took me to the largest orange tree that he knew of. He did not know how old it was, but over a hundred years at any rate. The trees would not be considered large seedlings in Riverside. In fact I have not seen here anywhere any orange trees that would approach those at the top of Brocton hill, in size of trunk or height, and even their larger trees have but few branches with fruit and foliage. You could throw a club through any tree I have seen here yet and not hit an orange. Lemon trees are also mean looking, with light crop.

This morning, in a garden below the hotel on a spot not over 2½ rods square, I counted the following, most of them good sized trees: Five willows (switches used for tying up vines); six orange trees—two old, four young; nine lemons; four grape vines; and the entire space underneath planted to beans. Most of the fruit gardens here have high frames of poles, on which grape vines are trained. In winter they are used to support a covering made of straw matting to protect the orange trees from frost. Many of these mats are still in place the first week in May. From my hotel window I can see men uncovering a patch of orchard: beans covering the ground, orange bushes above, olives higher up, and above all grape vines trained from the trees and higher poles. It is a funny sight and a terrible mess. One has to see it to believe it.

I have not been able to learn yet about the cost of fertilizers, but it looks queer to see the people packing manure into their little plantations on their backs in baskets and digging it into the little pits around the trees.

Mr. Ciampa tells me that horticulture is as crudely carried on in Rodi, in Sicily and other large orange and lemon districts as here, and that the patch of orchard he is now planting is to be a model for that country. He promised me he would come to Riverside and see our style of doing things so soon as he could arrange to leave for so long a trip. I was greatly pleased to have the opportunity of getting a glimpse at the life in a typical Italian villa, and to meet a real Italian gentleman. FRED MORRIS REED.

Sorrento, Italy, May 8.

Deeper Rooting Desirable.

TO THE EDITOR:—In the article on "Orange Roots" in last issue of PACIFIC RURAL PRESS, the second sentence from the last in second paragraph, under "Subterranean Explorations," should close with "nearer the surface," and the balance joined to the last sentence, making it read: "Where the soil favored and irrigation had been heaviest, some roots reached much deeper than indicated above." I would not trouble you with this, but as it stands it makes me say the opposite of what I designed to.

That deep-rooting of our fruit trees is of very great importance, and that it may be effected materially by proper manipulation of the ground and by thorough irrigation, my observations most firmly convince me. In fact, I am quite persuaded that most of our orchardists will sooner or later break up the entire space before planting, instead of only the immediate spot where the tree is to stand, to a much greater depth than is now common. It may be a long time before this is done to the extent of 3 or 4 feet, as in some of the old countries, but half that depth would be practicable here, and I think if this was practiced, especially in our more compact soils, that it would be difficult to estimate the good effect throughout the life of the orchard.

Riverside, June 2.

J. H. REED.

Agricultural Review.

FRESNO.

PREPARING FOR HARVEST.—Sanger Herald, June 2: Farmers in this vicinity are very busy haying, irrigating and getting their machinery in repair. All available farm hands are pressed into service, making ready for the grain harvest. A number of combined harvesters will begin work next week. Farmers are offering \$1.50 a day and board to men who are known to be good hands in the hay fields.

HUMBOLDT.

CATTLE AND BUTTER SHIPMENTS.—Arcata Union, May 26: A band of 515 cattle was recently driven out of this county overland, consigned to Allen & Blackburn of San Francisco. They were purchased by E. Light, and 315 head were obtained at Kneeland Prairie, 100 head at Harris and 100 head at Ridgeville. The prices paid ranged from \$13 to \$22.50. The steamer Pomona, sailing last Sunday, carried away the largest single shipment of butter sent out of this county, consisting of 111,660 pounds.

KINGS.

CREAMERY INCORPORATED.—Lemoore Leader, June 2: Articles of incorporation of the Kings County Creamery have been filed. Principal place of business, Hanford. Directors—F. J. Peacock, C. M. Cross, F. J. Wendling, Hanford; G. X. Wendling, San Francisco; J. C. Augberry, Bakersfield. Capital stock, \$35,000; actually subscribed, \$500.

LASSEN.

NEW CREAMERY.—Susanville Mail, May 24: The Adin Creamery Company, a joint stock company recently formed, with George Knight president, J. E. Niles vice-president, E. M. Wilson secretary and P. Johnson treasurer, will erect a creamery at once. William Mitchell has secured a contract to erect and equip the creamery at a cost not exceeding \$2500.

LOS ANGELES.

ORANGE GROWERS' DIVIDENDS.—Pomona Progress, May 31: The Pomona Fruit Growers' Exchange paid out Thursday to its members a dividend of \$35,000 on Navels delivered since April 9. This makes \$125,000 that the exchange has paid out in dividends since Jan. 1, 1900.

MENDOCINO.

HOG BUSINESS.—Ukiah Democrat, June 1: As the hog shipping season for this section is about over, our readers will be interested to know something of the extent of the trade. From November 1, 1899, to May 26, 1900, there have been handled at Ukiah, in round numbers, 14,000 hogs. Of these 8000 came from Laytonville, Round valley and Willits, 2000 from Ukiah valley, 1000 from Upper Lake section, 600 from Potter valley and 400 scattering. At the prices obtained these averaged \$6 a head to the grower, aggregating \$84,000. This by no means represents the full hog output of the county. The actual outlay for the production of these hogs was merely nominal, as most of them were raised on the natural grasses and mast. The figures above were obtained from Mr. John Donohoe.

PLACER.

FRUIT SHIPMENTS.—Newcastle News, May 30: Five carloads of fruit went out last week, and previous to that five cars were sent to the Eastern market. Express shipments this spring from Newcastle have been heavier than ever previously noted. Alexander peaches are now coming in quite freely. For the most part they look well and will no doubt receive fair prices. Black Oregon and Royal Ann cherries, Cherry plums, Newcastle Early apricots, raspberries and the favorite Dollar strawberries and blackberries are in the market. Cherries will continue in market for some time yet. Some Royal apricots are expected in before the end of the week.

SAN DIEGO.

FOR WORMY CORN.—San Diego Union, May 31: A rancher who has tried it says that wormy corn will be far less wormy if after the bloom of the corn has pollenized the silk, and the silk has turned brown, you pull the silk from the ear. You will destroy a large proportion of the eggs the moth has laid. After the silk turns brown the pollination is complete. If Paris green—one pound to 200 gallons of water—were used just after the forming of the silk it would also destroy the young worms.

NEW HAY.—New hay is beginning to arrive in considerable quantities, not only oat but wheat and barley hay as well. New hay is bringing about \$1 less than old. It is the general impression that there will be enough to supply not only the local market but to make shipments to outside points as well. The crop is especially heavy in the Escondido section.

Much of the new hay is not of the best quality, the late rains having spoiled a good part of it. Some also shows rust. This is the principal cause for the reduction in price.

WILL RIVAL BROOM CORN TRUST.—A letter to a Chicago paper says: The Pacific Coast Broom Company, recently incorporated at San Diego, and with all preparations made for work, proposes to engage in the manufacture of brooms out of material not controlled by the broom corn trust. In the ordinary broom about two pounds of corn are required; this, owing to the fact that the trust controls the market, costs 10 cents per pound. The San Diego broom will have only a half pound of broom corn; the remainder being leaves of the palm which grows in southern California and which have hitherto been considered valueless. These leaves will be cut or split by machinery, and used for the center or filling of the broom, the half pound of corn being used simply as binding.

SAN FRANCISCO.

FRUIT PACKERS INCORPORATE.—Record-Union, June 1: Articles of incorporation of the Pacific Fruit Packing Company have been filed with the Secretary of State. Principal place of business, San Francisco. Directors, Joseph Goetz, L. Hing, L. Kan, San Francisco, and F. H. Foote and P. W. Bellingall, Alameda. Capital stock \$100,000, subscribed \$2500.

SAN JOAQUIN.

HARVEST HANDS SCARCE.—Stockton Mail, May 30: Laborers are very much in demand and great difficulty is being experienced getting sufficient hands to attend to the harvesting. Laborers of that class are demanding from 50 cents \$1 a day more than was paid last year for the same work.

BURNING HAY.—People in the vicinity of Stockton have hay to burn, and they are burning it in a manner that would arouse the wonder of an Eastern farmer. In several fields near this city farmers are burning their crops of hay, for it was so badly damaged by the last rains as to be worthless.

BARLEY UNFIT FOR BREWING.—Geo. Loughead, who is operating two harvesting outfits a short distance above Grayson, says that the barley which he was cutting was yielding fifteen sacks to the acre. It is of good quality except that it is somewhat stained. The wheat in that vicinity will not yield well, as the dry weather prevented it from maturing. Samples of barley have been received from various points on the West Side, and in nearly every instance the grain will be unfit for brewing. In some cases the warm weather of last month shrunk the grain, while other barley whose kernels are as plump as could be desired was stained by the late rains. Mr. Loughead stated that he had seen some fields of barley that were affected by rust, though it is very unusual for that cereal to be thus affected. It is believed that the percentage of brewing barley will be comparatively small this year, though the late barley and that on the islands is said to promise well. In one of the samples of plump barley referred to were some kernels of wheat which, contrary to the general rule, were badly shrunken. It is known that a great deal of wheat has been affected with rust, though it is yet too early to estimate the extent of the damage. Captain J. W. Smith declared that none of the shippers would accept old brewing barley for export, as there is too much danger that it would be affected with weevil when it reached the other side of the water. There is some difference of opinion as to the amount of brewing barley carried over. Some think the amount is small, while others declare that a great deal is still in the warehouses, which will have to be sold as feed barley if the brewers will not accept it.

SAN LUIS OBISPO.

SQUIRREL BOUNTY REPEALED.—Salinas Index: Bounties on squirrel tails during the month of April cost the county \$8340.52. Claims were allowed for 834,052 tails, and the claims for 455 tails are still pending. The bounty has been taken off.

SANTA CRUZ.

WILL LABEL APPLE BOXES.—Watsonville Pajaronian, May 31: Box labels will be used this fall by the big apple packing firms. The labels are in colors, and as attractive as the most fetching orange labels. It is a catching way of advertising Pajaro apples and a vast improvement over the old stencil advertisement on box ends.

JUICE EXTRACTION WORKS.—F. C. DeLong expects soon to have here the machinery for his apple juice extraction works. He will place the machinery in the old flour mill building on lower Main street, and he will have everything in readiness for a big run here this fall.

APPLE TREES BARREN.—We have

been informed that trees in the center of some large orchards are almost bare of apples. Is this barrenness due to lack of pollination? This is a question deserving of close study and continuous experiments. A. N. Judd says he can demonstrate to a certainty by an examination of apple trees in his orchard that varieties should be mixed in planting, and that where it is not done more blossoms are sterile than where it is done. The massing of Bellefleur trees in orchards is held by many to be one of the main causes for the pronounced decrease in the production of this popular variety of apples. If the planting of trees of another variety or the presence of swarms of bees will aid the Bellefleur or any other variety of apples in maintaining an average production, such helps should be employed.

SOLANO.

FIRST BARLEY.—Dixon Tribune, June 1: The first barley of the season was received at the Grangers' Business Association warehouses last Monday. It was raised on the farm of Mrs. Dora Robben. The first barley delivered at Fremont was received on May 23rd. It was grown by Hans Timm.

ALMOND CROP.—It has been reported that the almond crop throughout the State promises to return a phenomenally large yield. The plain truth is that the almond crop taken altogether will not yield one-third of a crop. The crop here is short, the Davisville crop is short and so is the Suisun crop. The almond growers of Chico have sold their entire crop for 9 cents. Therefore there will be very few almonds to offer this year and the growers should not take less than 10 cents.

CHERRY CROP.—Vacaville Reporter, May 26: The cherry crop in this section, with the exception of Royal Ann and other lato varieties, has been gathered. It has been an unusually good season, with good prices ruling.

FIRST TRAGEDY PRUNES.—The first Tragedy prunes of the season were shipped last Wednesday, May 23. They were raised on Mrs. A. McMurtry's place.

HIGHEST PRICE FOR CHERRIES.—The highest price ever obtained for a single box of cherries in New York, shipped either by express or freight, was for a ten-pound box from the Idlewild Ranch, (P. Lyon), \$20.50. This box was shipped through Hartley Bros., left Vacaville May 3rd and was sold in New York May 15th by the Earl Fruit Co.

STANISLAUS.

FERTILIZING PAYS.—Modesto Herald, May 31: James Thompson of Lanark Park placed a sackful of nitrate of soda on some grain, by way of experiment, at the instance of the agricultural department of the State University. The fertilizer was spread broadcast over little more than an acre of wheat, then 8 inches high. This was early in April, and the subsequent heavy showers soaked the fertilizer into the ground. Mr. Thompson reported this week that the experiment had resulted very beneficially. The wheat—winter sown—has the deep green hue of summer-fallow, and uniformly carries four grains to the mesh. The patch fertilized is plainly distinguishable to the eye from the remainder of the tract, while investigation shows the heavy yield stated. Mr. Thompson plants the Blue Stem Australia, a bearded wheat that returns three grains to the mesh, hence the fertilizer increased the yield 25%. On the remainder of the tract there are but three grains to the mesh, as heretofore. The Blue Stem Australia is an unusually vigorous, prolific wheat, other varieties planted by neighbors yielding but two grains to the mesh. In South Australia the fertilizer is drilled in with the seed and has doubled the former yield. Used sparingly each season for a period, there would be no danger from "burning up," even with our comparatively light rains. Where the drilling method is not practicable, spreading broadcast by hand in advance of the rains proves beneficial. Before undertaking to fertilize, the farmer should send samples of the soil to the University for analysis, that the deficient elements may be determined and the best fertilizer for the particular land recommended. The only expense involved in this connection will be the expressage on the samples of soil.

SWEET POTATO CULTURE.—Modesto Herald, May 17: Japs are coming into Turlock to work the sweet potato fields. White labor is scarce even now, with the harvest and fruit season just opening; and white men are not disposed to labor on sweet potatoes, the planting, weeding and finally the gathering of the crop involving constant bending, or working on the knees. Mr. Gray, of Turlock, the pioneer in the sweet potato business in this county, and Ephraim & Percival Bros., planting forty acres near Ceros, are employing Japs. It is stated that the latter have contracted for planting, cultivating and gathering the crop for 30% of the

yield. Mr. Gray planted about ten acres last year. The crop was large and the potatoes excellent. This year he will set out about forty acres. Mr. Gray undertook to store a portion of his crop until the season had passed and high prices would rule. He buried the potatoes in dry sand in a barn. Recently the potatoes were unearthed. It was found that the plan had been only partially successful, quite a percentage of the potatoes having spoiled. A carload of the good ones were shipped lately, realizing a handsome price.

TEHAMA.

FRUIT PICKERS' WAGES.—Red Bluff Cause, June 2: There appears to be a dearth of white labor and husbandmen are confronted with the necessity of looking elsewhere for help to save their ripe fruit crops. This the fruit growers are doing by employing Japanese. Heretofore this labor was given to Chinese. One of the reasons for this preference is that Japanese are willing to work for whatever their employers are willing to pay, while Chinese demand more. The present rate of wages paid to Japanese fruit pickers ranges from 90 cents to \$1 a day, they finding themselves. The Chinese demand \$1.25 to \$1.50 a day and find themselves.

WASHINGTON.

OUTLOOK FOR HOPS.—Seattle Times, May 31: Hop buyers estimate that there are not more than 2000 bales of last year's crop left in this State. Of this amount 250 bales are held in the Yakima valley and the rest on this side of the mountains. Twelve thousand bales are still held in Oregon and the California holdings will not amount to more than 1500 bales. These hops are not of the best quality, and a large percentage of them will be sold at a big sacrifice. Buyers are contracting for this year's hops at 10 cents. This is the figure quoted in a few contracts which have been closed with valley growers. The same figure will be named for Lewis county. In the Yakima districts buyers are offering to make contracts at 9@10c. Not many contracts have been signed at these figures. Too many of the hops are covered with mould. Some heavy sales of hops of this character have already been made, and the number of mouldy hops left in the coast country is still large. Hops affected in that manner will not bring more than \$4 or \$5 a bale, and the rest will probably be sold at not more than 7 cents. Hops in fair condition have been sold during the earlier part of the season at from 4 cents to 7 cents. Several reasons are assigned by growers for the mouldy condition of their hops. The suggestion is offered in some quarters that the bales were stored in damp buildings, or in some place where they were not properly protected from the rains. The cloth coverings of the bales have been covered with mould in many cases and the mould has eaten into the bale itself. Dealers attribute the presence of mould to the fact that the hops were picked during a rainy season and they were never properly dried. The growers who held their hops over into the new year have lost money. The price has declined since the first of January and the danger from mould has increased. Some hops stored in kilns and dryhouses have been well preserved and not lost much of their value. The unfavorable conditions are much more marked in Oregon than in Washington.

WHEAT CROP PROSPECTS.—Seattle Times, May 28: State Grain Commissioner George P. Wright has returned from a trip through the wheat districts, and reports that through the heavy lands in the foothills around the Blue mountains and in the Palouse country the farmers are complaining of too much rain. In localities where the soil is light everything is thriving, the grain being in excellent condition. The grain suffering from excess of moisture is early sown fall wheat, which grew very thick, and the farmers state it is effected to some extent with rust. Whether the rust will continue serious enough to blight the crop remains to be seen. The rest of the crop is in splendid condition, particularly spring grain of all kinds.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

The Marseilles.

Ye sons of freedom, wake to glory!
Hark! hark! what myriads bid you
rise!
Your children, wives, and grandsires
hoary,
Behold their tears and hear their cries!
Shall hateful tyrants, mischief breeding,
With hireling hosts, a ruffian band,
Affright and desolate the land,
While peace and liberty lie bleeding?
To arms! to arms! ye brave!
Th' avenging sword unsheathe;
March on! march on! all hearts re-
solved
On victory or death.

Now, now the dangerous storm is rolling,
Which treacherous kings confederate
raise;
The dogs of war, let loose, are howling,
And lo! our fields and cities blaze;
And shall we basely view the ruin
While lawless force, with guilty stride,
Spreads desolation far and wide,
With crimes and blood his hands embru-
ing.

O Liberty! can man resign thee,
Once having felt thy generous flame?
Can dungeons, bolts, or bars confine thee?
Or whips thy noble spirit tame?
Too long the world has wept, bewailing
That falsehood's dagger tyrants wield,
But freedom is our sword and shield,
And all their arts are unavailing.

—Rouget de Lisle.

A Day in June.

And what is so rare as a day in June?
Then, if ever come perfect days,
Then heaven tries the earth if it be in
tune,
And over it softly her warm ear lays;
Whether we look or whether we listen,
We hear life murmur or see it glisten;
Every clod feels a stir of might,
An instinct within it that reaches and
towers,
And, groping blindly about it for light,
Climbs to a soul in grass and flowers;
The flush of life may be well seen
Thrilling back over hills and valleys;
The cowslip startles in meadows green;
The buttercup catches the sun in its
chalice,
And there's never a leaf or blade too
mean
To be some happy creature's palace.

—James Russell Lowell.

A Shabby Romance.

"Cling-a-ling-a-ling!" It was the
telephone. I went to the instrument
and waited.

"Is that you, Frances?"

"Daton—my old friend, Percy Daton
—just looked in on me. I'm so rushed
that I couldn't take him out to lunch;
told him to call at the house and I'd see
him later in the evening. Look after
him—first rate fellow; intellectual, you
know, and all that—authority on Eng-
lish history, I believe. Get it all
straight? Name? Daton; D-a-t-o-n. No,
not Perry—Percy—P-e-r-c-y-a-l. Good-by."

An intellectual stranger to dinner!
An authority on English history! And
I obliged to keep up my reputation as
a fairly well-informed woman. There
was no time to cram; so I did what a
woman usually does in such emergen-
cies—put on my smartest gown in
honor of "company."

The gown really was becoming, and
there was a chance that I might have a
breathing spell before Mr. Daton's ar-
rival.

"Ding!" went the door bell.

I awaited Nora's announcement. She
bore a card on the tray.

A caller! "Miss Elizabeth Patton."
Lizzie Patton! I hadn't seen her since
high school days. A vague remem-
brance of business troubles that took
the family away from town and out of
society came to me as I looked at her
card. We had never been particularly
intimate. Why had she called on me,
and at such an inconvenient time, too!
I fear that I went down to the drawing
room in anything but an hospitable
frame of mind.

Lizzie rose as I entered the room,
but before I could greet her she flushed
up and looked uncomfortable.

"How do you do, Miss Patton?" I

said. "Or shall I call you Lizzie? It's
a long while since we've met. Do you
see any of the girls nowadays? I've
lost track of all but half a dozen or so."

"I—I meet one once in awhile," she
answered. "Mother and I live very
quietly. We don't see much company."

"What do you find to do with your-
self?" I went on, following the usual
stupid custom of trying to relieve an
embarrassed person by dint of persist-
ent questioning.

"Oh, I keep busy," she began, then
checked herself and finally went on with
a rush. "I am a canvasser—a book
agent. I've a history that I'm trying
to sell by subscription; would you care
to look at it?"

"Let me see the book," I said, "if
you have it with you?"

"It is entitled, 'A History of Eng-
land From the Earliest Times to the
Present Day,' with a guarantee of an
annual supplement at a nominal price,"
she announced, with professional glib-
ness.

A history of England!

"My dear," I said, quickly, "tell me
—are you well up in English his-
tory?"

"I've crammed on it for the last six
weeks," she answered. "You have to
be up in a subject if you mean to sell a
book."

"Oh, Lizzie!" I said, with my head
full of Mr. Daton's impending ar-
rival, "if you'll only stay to dinner with
me and help me out, I'll buy the
book."

Lizzie looked bewildered.

"Come up to my room," I went on,
"and I'll tell you why."

I sat Lizzie down in my most com-
fortable chair and told her how I was
bothered. When she found that she
could do me a favor, she came out splen-
didly; we chattered like two school-
girls, and she grew prettier every
minute. She spoke of canvassing as if
it were a good joke; she laughed about
her climbs up long flights of hot stair-
ways in gigantic flats, at her encoun-
ters with obstinate janitors, suspicious
servants, and "ladies" who felt at lib-
erty to meet her with insolence or con-
tempt.

I was tempted to say, "Poor dear!"
but I didn't; I picked up a lace fichu
instead, putting it around Lizzie's neck,
and fastening it with my pet stick-pin.
It was becoming and made her even
livelier—I've noticed that "Poor
dear" is apt to have the opposite ef-
fect. We were laughing so loudly over
some girlish scrape that Nora knocked
twice before I heard her. It was Mr.
Daton's card; we quieted down hastily
and descended in a dignified procession
of two to welcome the guest of the
evening.

His appearance was an agreeable
surprise. I was prepared for some-
thing elderly and professional; for
awkwardness of manner and shabbi-
ness of clothes. But Mr. Daton looked
not much past forty; alert, easy, and
gracefully courteous. He chatted at
dinner about his pranks with Ralph in
their school days (many of the pranks
were news to me, and I made mental
note for Ralph's benefit), about the
theaters, the picture exhibitions, and
the delights of golf.

When dinner was nearly over I began
to think it about time to make some al-
lusion to Mr. Daton's pet subject; but
I found it very difficult. He gossiped
about the latest society lion, the last
new opera and the recent exploits of
some of the smart set—and English his-
tory seemed a dreadfully schoolish
thing to introduce into such light con-
versation. Lizzie—feeling, I suppose—
that it was expected of her—made a
sudden plunge at the subject.

"Are you one of those people who
rally around the White Rose and uphold
the Stuarts, Mr. Daton, or do you still
believe in Oliver Cromwell?"

Mr. Daton looked surprised.

"Why—er—no, Miss Patton. I—
why—I suppose Americans stick up for
Cromwell. Not that it matters, I dare
say. Let me tell you about a little
hunting trip of mine last summer," and
he went into an elaborate description
of an Adirondack hunt, of which we
comprehended about one-half. Evi-
dently Mr. Daton was disinclined to
talk shop. Lizzie had no intention of

being silenced in that fashion—it was
against all her professional training.

"You are sorry, then, that the Com-
monwealth went to pieces—you would
like her to have such a government as
ours?"

"Oh, I say!" he rejoined, and it was
so apparent that he was annoyed that
I gave the signal for rising from the
table, "isn't that a bit heavy just after
dinner, Miss Patton?"

The average girl would have given it
up at that, but Lizzie clung to the idea
of fulfilling her contract. Moreover,
her blood was up, speaking profession-
ally. Once back in the drawing-room,
she attacked him as to historical prece-
dents for international arbitration, I
keeping quiet meanwhile, overwhelmed
by her persistency. He dodged the
subject again, and talked rapidly for
half an hour, flying from one topic to
another with a conscious, half apolo-
getic air, and when he stopped I ral-
lied to his relief and asked Lizzie to
sing.

Lizzie started in with ballads of Mer-
rie England in the olden time, disdain-
ing anything less ancient than the
songs of Shakespeare. It wasn't until
he had listened for some time that our
guest caught sight of the historical
pamphlets, and as he read the title his
eyes began to twinkle.

"Latest thing in history, I sup-
pose?" he said, nodding his head
towards the pamphlets as Lizzie rose
from the piano. "Looks as if some en-
terprising book agent had been trying
to 'do' you, Mrs. Robinson. Thank you
for the songs, Miss Patton—now that I
know where you came upon that histor-
ical knowledge, I'm relieved. Can rub
up myself, you know," which I thought
rather mean in him.

Lizzie turned upon him quickly. "I
am obliged to cram more or less on
many subjects, Mr. Daton, being a—
a book agent"—here she reddened a
little, but went on bravely—"for one
has to know something about a book
that one handles."

"Oh, Miss Patton," he broke in,
looking ashamed and distressed "you
must pardon me—indeed, you must; it
was a stupid speech, anyway. Really,
you know, I think it must take a lot of
skill—and pluck—to sell books on sub-
scription."

"Won't you give us your opinion on
the history, Mr. Daton?" I struck in,
while Lizzie looked her forgiveness, for,
indeed, he had a frank and winning
way. "You're an authority on that
subject, I understand."

"I? An authority?" he answered,
in a tone of honest wonderment, and
then he suddenly laughed in a fashion
that outraged all etiquette, yet so
good-naturedly that we laughed our-
selves, half protestingly.

"I'm very ill-mannered, I know," he
said, when he could command his voice,
"but you're thinking of my uncle—I
was named for him."

"Oh!" said Lizzie, looking uncom-
fortable. "Of course, if I'd known—"

"Why, of course," he replied. "No,
I'm not a celebrity, Mrs. Robinson," he
went on, turning to me. "A very
hare-brained fellow, I'm afraid; but my
uncle would have had a treat."

"We'd be glad if you would bring
him with you some time," I said, more
for politeness' sake than anything else,
I fear.

"My uncle's hardly a calling man,"
he replied. "Poor old chap, his back
is very much bent and his face
is like wrinkled parchment; his
clothes—well, he regards the com-
forts of life as a waste of effort and
barely tolerates its necessities. Oh,
by the way, have you heard the latest
about—"

But just then I heard Ralph's latch-
key, so I started for the door. That's
the way we began, and we've kept it
up ever since.

"I drew back a bit this time, though,
for a bent figure, with keen, bright eyes
that glanced sharply around, stood by
Ralph's side. Catching sight of Mr.
Daton in the drawing-room, the shape
cried shrilly, 'Percival! Percival!' and
shambled into the room ahead of us.

I knew by this time that this was the
learned uncle, and hastened forward in
time to hear him say: "I've good

news, my boy; I've good news! They're
going to translate my history into
French—I wanted you to know it, so
I've hunted you up; here's the note,"
entirely oblivious to the presence of
three strangers.

Mr. Daton glanced at the note. "I
congratulate you," he said. "The pub-
lishers enclose a check for \$500 on ac-
count, I see."

"Yes, yes!" replied his uncle, "I
believe that they did say something
about a check. What's this? What's
this?" he cried, shuffling up to the
piano and seizing upon the sample pam-
phlets of the English history. "Ah,
the new edition, to be sold by subscrip-
tion—ah, um, excellent! Yes, yes!
That note looks better in the text," he
sank into a neighboring armchair, for-
getful of his surroundings in this new
delight.

"He'll sit there till morning, if I
don't rouse him," Daton said. He
touched the old gentleman on the arm
and looked at Lizzie. "May I?" he
said, and she nodded. They seemed to
have a good understanding, I thought.

"Perhaps you'd like to talk with a
young lady who has had something to
do with putting this edition on the mar-
ket," he remarked, as his uncle looked
up. "This is Miss Patton; she is one
of the publisher's agents."

"I am pleased to meet you," the
elder Mr. Daton said, rising from his
chair and bowing with that gracious
courtesy that is never out of date.
"And I do not doubt that you find
ready purchasers. It is a good his-
tory—I have spent many years on it;
no mere digest of other men's work,
though I have read all the standard
histories, but verified from original
documents, old deeds, letters, mani-
fests, a line here, a scrap there—ah,
and how I have travelled, too; but not
of late; no, no!" He seemed to lose
himself in his memories, then he looked
up sharply at his nephew, "You own a
copy, do you not?"

"Well, not as yet," began that gen-
tleman, temporizing, but his uncle
caught him up.

"Then you have a fine opportunity
before you, sir; doubtless you have set
him an example, madam?" he said,
turning towards him.

"I—well, the matter is under consid-
eration," I replied, recalling my bar-
gain with Lizzie—she had done her
part, certainly.

"I really must apologize, madam,"
he rejoined, and those keen old eyes of
his twinkled as he spoke. "My intru-
sion may have disturbed the negotia-
tions. But pray do not let my pres-
ence be any bar to their conclusion."

I saw the nephew side up to Lizzie,
and Ralph plunge his hand into his
trousers pocket.

"No, no," I whispered quickly. "She
doesn't take the money. Ask her for
her subscription book!"

The younger Mr. Daton was in pos-
session of it, however, while Lizzie,
blushing, seemed to remonstrate.

"It's no use, Miss Patton," I heard
him say, half aloud. "You can't re-
fuse—there's your duty to the pub-
lisher and there's mine to my uncle—
oh, come, now! Honestly, you know, I
ought to own it, as a matter of compli-
ment to him; why shouldn't I buy it of
you?"

His voice dropped lower than ever,
so that I heard no more; but he evi-
dently had his way. Then Ralph wrote
his name on the list, looking sheepish
and uncomfortable—men are seldom
equal to such a situation.

"I really must go," said Lizzie,
breaking an awkward pause. "Thank
you both—so much!" she said, with a
flush that I remembered from our
school days, when Master Dolliver
praised her.

"I fear, Percival," said the historian,
rising, "that I must trespass upon
your kindness and ask you to see me to
my rooms. If Miss Patton will per-
mit me—might we not go along to-
gether?"

So off they went, the uncle on one
arm and Lizzie on the other—fichu,
stick-pin and all. Lizzie looked so con-
tented when I kissed her good-bye that
I hadn't the heart to say anything
about them.

"Well," said Ralph, as he fastened

the door behind them and turned to put out the hall light, "Daton didn't make any very heavy demands on my attention; how was it with you, my dear?"

"It would be nice if he should marry her—she's a dear girl," I answered.

"Oh, pshaw!" Ralph retorted; "you women can't let a man be decently civil to a girl without seeing a wedding at the end of it. I'm tired; let's go to bed."

One evening about four months later I saw that Ralph had something on his mind—I could tell by the profound interest that he seemed to take in contemplating the toe of his slipper.

"I suppose you remember that girl who was here that evening with Daton, don't you?" he said at length.

"Oh, yes," I said; "I remember her."

"Well, they're engaged."

"So Lizzie told me this morning when she brought me back my fieu and stick-pin."

There was silence. Ralph was meditating. "Um! Well, why don't you say 'I told you so?'"

"Because I didn't," I answered, meekly; "I only said it would be nice."

Meekness has its rewards. Ralph stopped and kissed me. "I hope, dear," he said, "that 'it may be half as nice' for Daton as it has been for me!"

Brave Boer Girl Defeats Kitchener.

Of all the stories told by the correspondents with General Kitchener this by far is the best:

While Lord Kitchener was engaged in suppressing the Preiska rebellion he ordered the destruction of a certain farmhouse. Not seeing any signs of his order being carried out he rode over with his staff and found an interesting situation. In the doorway of the doomed farmhouse stood a pretty young Dutch girl, her hands clasping the door posts and her eyes flashing fire from beneath her dainty sunbonnet. The Irish sergeant in charge of the party of destruction was vainly endeavoring to persuade her to let them pass in, but to all his blandishments of "Arrah, darlint, aushla," etc., the maiden turned a deaf ear and a deadlock prevailed. Kitchener's sharp "What's this!" put a climax to the scene. The girl evidently guessed that this was the dreaded chief of staff, and her lips trembled in spite of herself.

Kitchener gazed surlily at her, standing bravely though tearfully there, and turned to his military secretary. "Put down," he growled, "that the commander's orders with reference to the destruction of Rightman's farm could not be carried out, owing to unexpected opposition. Forward, gentlemen."

This is vouched for by C. A. McNuelen, an engineer, recently returned from Johannesburg.

Treating Disease With Light.

Dr. Finsen of Denmark has caught the attention of the entire medical world by his new method of treating certain diseases by means of rays of concentrated light. His investigations are supported by State and municipal aid, and are endorsed by the leading physicians and professors of Copenhagen. The arc lights used in the treatment are 40,000 candle power, about twenty times as strong as the ordinary arc light. Already 350 cases of skin disease have been successfully treated by Dr. Finsen. This is the first instance in medicine where light has been successfully employed as a curative agency. After a series of experiments, Dr. Finsen has discovered that the blue, violet and the ultra-violet rays, when concentrated, become a powerful therapeutic agent, killing bacteria in the skin of a patient in a few seconds. In order not to burn the skin when operating on a patient, it is necessary to cool the light; this is done by a lens that excludes much of the yellow, red and ultra rays that are heating, but have no bactericidal qualities. In treating skin difficulties, sunlight is employed as often as possible, otherwise the medium is an electric arc

lamp. Dr. Finsen's method is considered as successful for scarlet fever and smallpox as in skin diseases.

Reputation.

Good name in man and woman, dear my lord,
Is the immediate jewel of their souls;
Who steals my purse, steals trash; 'tis something, nothing;
'Twas mine; 'tis his, and has been slave to thousands;
But he that filches from me my good name
Robs me of that which not enriches him,
And makes me poor indeed.

How Much to Eat and be Healthy.

A famous physician has made up a new system of what people should eat to be healthy. He figures this out in as exact, scientific a way as an engineer calculates how much coal his engine needs daily. He calculates that a person needs three and one-third pounds of solid food daily.

But the knowledge of what weight of food a person should consume a day does not settle the diet question, which is one of the most important things in life to every person.

A set of this great physician's diet tables, while not as luscious looking as a French chef's table d'hôte menu, will result in better digestion. In these tables this physiologist shows the different degrees of nourishment in the various kinds of meats, cereals and vegetables.

Among meats beef stands at the head of the list for its proteids, or albuminous qualities, with the exception of fowl. But as the percentage of fat is less in beef than in fowl it is more easily digested. The presence of fat in meat tends to retard digestion by preventing the digestive fluids from making their way in between the fibers.

Eggs are to be regarded as complete natural food, as they contain all the necessary food principles.

Milk is a natural food for the young of all animals, as well as of men. Under a microscope milk is seen to consist of a clear fluid filled with small oily globes one-millionth of an inch in diameter. These globes contain the nourishing quality of milk, called casein. When taken into the stomach it is coagulated, but passes on easily through the digestive organs of children.

That the cereals are most important and useful foods is shown by the fact that they contain such large percentages of sugars, starch and gums, called carbohydrates, as well as a considerable amount of proteids or albuminoids. But owing to the cellulose or woody fiber which covers the kernels, they are somewhat difficult of digestion.

Vegetables vary greatly in nutritive value and digestibility. The cellulose in them, however, tends to retard digestion. For this reason nearly all vegetables require cooking. When subjected to heat and moisture not only is the texture of the vegetable softened, but the starch grains are partially converted into sugar and other substances easily assimilated. Potatoes, when well cooked, are very easily digested, because they contain but little cellulose.

Ripe fruits, oranges, lemons, grapes, pears, peaches, cherries, apples and berries generally have but little nourishing quantity, as they consist of 75% to 85% of water. But the sugars and acids which they contain make them invaluable in making up a healthful diet.

There is a constant discussion about the relative value of meat diet, as contrasted with that of cereals and vegetables. Dr. Brubaker has calculated the actual value of animal and vegetable diet in plain figures. He shows that one-quarter of the vegetable foods taken into the system remains undigested, while in meats the undigested portion is only one-tenth.

As neither animal nor vegetable foods contain the nutritive element in proper proportions to satisfy the human system, man's instinct has led him to make a combination of two kinds of diet.

To construct a scientific diet it is only

necessary to combine two or more foods in sufficient quantities to furnish the amount of nitrogen and carbon required by the body in twenty-four hours. Here is what Dr. Brubaker considers a "scientific" amount and assortment of food per day: Meat $\frac{1}{2}$ pound, bread 1 pound, fats $\frac{1}{2}$ pound, potatoes 1 pound, milk $\frac{1}{2}$ pint, eggs $\frac{1}{2}$ pound, cheese $\frac{1}{2}$ pound. This makes a weight of three and a third pounds of solid food. But to thrive upon this diet a person must add the amount of acids, sugar or salts which his particular system needs. The natural craving of the appetite is a pretty good guide in the matter.

Why Grant Never Swore.

While sitting with him at the camp fire late one night, after every one else had gone to bed, I said to him: "General, it seems singular that you have gone through all the tumble of army service and frontier life, and have never been provoked into swearing. I have never heard you utter an oath or use an imprecation."

"Well, somehow or other, I never learned to swear," he replied. "When a boy I seemed to have an aversion to it, and when I became a man I saw the folly of it. I have always noticed, too, that swearing helps to rouse a man's anger; and when a man flies into a passion, his adversary who keeps cool always gets the better of him. In fact, I never could see the use of swearing. I think it is the case with many people who swear excessively that it is a mere habit, and that they do not mean to be profane; but, to say the least, it is a great waste of time."

Ladies Publish a Magazine.

The domestic science department of the Oakland Club has issued a magazine which will be published monthly and exclusively to the department it represents. Mrs. M. L. Wakeman-Curtis is editor of the new publication and is assisted by Mrs. John Bakewell, Mrs. E. G. Barber, Mrs. Hardiman-Miller and Miss Mary McClees. The business affairs of the magazine are in the hands of Mrs. Robert Watt and Mrs. Charles D. Olney is her assistant. The work of the domestic science school is described and the courses are outlined in full.

ONE to-day is worth two to-morrows.—Franklin.

DOMESTIC ECONOMY.

Hints to Housekeepers.

When making an omelet never let it cook long enough to be hard inside. An omelet to be good should "run" when cut open.

Pare, remove the eyes and pick pineapple in pieces with a silver fork, sprinkle with sugar and place for an hour or two in a cold place before serving.

Keep a cup of vinegar standing on the stove when cabbage or onions are cooking. This is said to absorb the unpleasant odors that otherwise penetrate to the farthest corner of the house.

Little onions are now boiled and served on toast after the manner of asparagus. This affords a change from the stereotyped way of serving and will usually be found most acceptable.

When a ham or any large piece of meat is boiled for the purpose of slicing cold, use plenty of water and let the meat stand in it until cold; it will thus absorb much of the nutritious juice drawn out in the boiling process.

If people only ate more fruit they would take less medicine and have much better health. There is an old saying that fruit is gold in the morning and lead at night. As a matter of fact, it may be gold at both times, but then it should be eaten on an empty stomach and not as a dessert, when the appetite is satisfied and digestion is already sufficiently taxed. Fruit taken in the morning before the fast of the night

has been broken is very refreshing, and it serves as a stimulus to the digestive organs. A ripe apple or an orange may be taken at this time with good results.

Arsenic is very often present in the pigment used for wall paper; and if walls are covered with a paper containing a deadly poison, it is natural that the health of those living in the rooms should suffer. It is important, therefore, to select wall papers which do not contain arsenic and the method of testing them is simple in the extreme. Take a piece of paper and light it; and, if arsenic be present, you will notice an odor like that of garlic. Do not inhale the smoke. Another way of testing the paper is to pour over a little diluted hydrochloric acid. If the greens in the pattern become blue after this treatment, it is because they contain arsenic.

If every housekeeper would take account of stock annually, or at even more frequent periods, and keep a household inventory, she would find it an aid to economy as well as systematic management. Knowing how many sheets and pillow cases she has, and how many knives, plates and tumblers will be necessary to supply the stock depleted, will simplify matters and she can save many dollars she would otherwise spend needlessly. Most housekeepers know how much silverware they have and count it frequently, but other less valuable things disappear and are replaced at an expense when a more careful method would prevent a continual falling off in household necessities.

Strawberries.

Do not buy dirty berries. If they must be washed let it be done rapidly under a stream of water, and the berries be instantly shaken dry.

The large berries are served raw with the hulls on, each berry being dipped into powdered sugar before being eaten. Smaller berries are hulled and served with sugar and whipped cream.

Strawberry shortcake, properly made, is fit to be the ambrosia of the gods, says an exchange. When below this standard it is poor stuff. To be good, there must be berries in generous quantity. The "short" does not apply to the berries. A cake shortcake served cold is not a dish to arouse enthusiasm; but to arouse a man to real enthusiasm make a cake like this:

Make a dough as for cream tartar biscuits with a double supply of shortening. Split the cake when baked, using a warm thin knife to do it. Spread heavily with butter, mashed berries, sugar. Have two layers of berries, three of the bread. Serve it at once, and have to eat with it a sauce of berries well mashed and sweetened, and, to put on after this, whipped cream. There is nothing to be made in food more delicious than a shortcake like this, but it will spoil all others for the eater.

Cooking the Hare.

There are many ways of cooking the Belgian. The young make good fries. The old are good when either fried, baked, broiled, or roasted. To those who are fond of a nice, sweet juicy Dutch dish, let me tell you to try this plan: Cut the hare into rather small uniform pieces, take your baking pan and put into it a layer of onions sliced very thin, then a layer of meat, next a layer of onions, and so on until the meat is all nicely arranged in the pan. Sprinkle each layer with salt and pepper, add a little butter, if you removed all fat when dressing the hare. Then cover up tight and place on the back part of the stove and let it simmer (not boil) for two or three hours, according to the age and size of the hare. When all things are ready, call in your friends and partake of something so juicy, so sweet and tender, that if Mary and Johnnie were to pass their plates for the third time you would not think it strange. There is only one thing they like better, and that is more.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, June 6, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	June.	July.
Wednesday.....	*—@—	87 1/4 @ 87
Thursday.....	—@—	87 1/4 @ 87 1/2
Friday.....	66 1/4 @ 65 1/2	67 1/4 @ 66 1/2
Saturday.....	66 @ 65 1/2	67 1/4 @ 66 1/2
Monday.....	65 1/2 @ 66	66 1/2 @ 67
Tuesday.....	65 1/2 @ 66 1/2	66 1/2 @ 67

*Holiday.

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday.....	5s 8 1/2 d	5s 8 1/2 d
Thursday.....	5s 9 d	5s 9 d
Friday.....	5s 8 1/2 d	5s 8 1/2 d
Saturday.....	*—s—	—s—
Monday.....	*—s—	—s—
Tuesday.....	*—s—	—s—

*Holiday.

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec. 1900.	May, 1901.
Thursday.....	99 1/2 @ 99 1/4	—@—
Friday.....	99 @ 99 1/4	—@—
Saturday.....	98 1/2 @ 99 1/2	—@—
Monday.....	99 @ 99 1/4	—@—
Tuesday.....	99 1/2 @ 99 1/4	—@—
Wednesday.....	1 00 1/2 @ 1 01 1/2	—@—

WHEAT.

Much the same conditions prevailed in the wheat market, both here and abroad, as during preceding week. There is certainly no improvement to record, and none in prospect for the immediate future. There is too much wheat, too little foreign demand, and too few ships, for the time being. These conditions will not always last, but it is doubtful if there will be any material change during the next six months. Unfavorable conditions for the producing interest may continue into the coming year. But it is as certain as anything not yet established can be that there will be sooner or later a turn in the tide, and improvement sufficient to make it profitable to carry wheat at present values, barring, of course, the destruction of the grain by weevil or otherwise. The most unfortunate circumstance in connection with the present state of affairs, and helping largely to bring about and continue the existing depression, is that many are compelled to sell and are unable to exercise any judgment in the matter. The decrease in the visible supply east of the Rockies was only 529,000 bushels the past week. The world's shipments showed a decrease of 1,187,000 bushels. At the close the speculative market jumped up about 1 1/2c, in sympathy with Chicago, and based on dry weather in the spring wheat belt, but spot market showed little or no improvement.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1900, delivery, 98 1/2c @ \$1.01 1/2.
May, 1901, delivery, —@—c.
Wednesday, at regular noon session of Call Board, December, 1900, wheat sold at \$1.00 1/2 @ 1.01 1/2; Ma, 1901, —@—.

California Milling.....	\$ 93 1/4 @ 98 1/4
Cal. No. 1 shipping, alongside.....	91 1/4 @ 93 1/4
Oregon Valley.....	90 @ 95
Walla Walla Blue Stem.....	95 @ 97 1/2
Walla Walla Club.....	85 @ 95
Off qualities wheat.....	85 @ 90

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	6s 3d @ 6s 5d	6s 0 1/2 d @ 6s 1d
Freight rates.....	26 1/4 @ 27 1/2 s	38 1/2 @ 40 s
Local market.....	\$1 06 1/4 @ 1 08 1/2	90 @ 93 1/2 c

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on June 1st and May 1st:

Tons—	June 1st.	May 1st.
Wheat.....	139,933	152,103
Barley.....	140,768	43,828
Oats.....	4,295	3,317
Corn.....	192	205

*Including 90,018 tons at Port Costa, 48,414 tons at Stockton.

†Including 19,338 tons at Port Costa, 11,406 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 12,170 tons for the month of May. A year ago there were 71,501 tons wheat in Call Board warehouses.

FLOUR.

Business is slow, both for shipment and on local account. As there is little likeli-

hood of values hardening during the next few months, and a possibility of lower prices being current, buyers are naturally not inclined to purchase to any noteworthy extent beyond immediate requirements.

Superfine, lower grades.....	\$2 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

Offerings are fairly liberal, considering the immediate very limited demand, and the market shows weakness. Outward movement is light, but it is probable that purchasing of new crop barley on European account will begin in wholesale fashion in the near future, if operations on this line have not already commenced in the interior. Any firmness which the market may develop, however, is not likely to be experienced during the next few months. Prices on Call Board touched slightly lower levels than preceding week, with trading in options light.

Feed, No. 1 to choice.....	65 @ 67 1/2
Feed, fair to good.....	62 1/2 @ 65
Brewing, No. 1 to choice.....	72 1/2 @ 80
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS

Although quotations remain in practically the same position as for some weeks past, the market lacks strength, with demand slow, and transfers at full current figures the exception, especially of fair to medium grades of Whites and Grays, these descriptions constituting the bulk of offerings. Spot supplies show an increase of about 25%, as compared with a month ago.

White Oats, fancy feed.....	1 22 1/2 @ 1 25
White, good to choice.....	1 12 1/2 @ 1 20
White, poor to fair.....	1 05 @ 1 10
Gray, common to choice.....	1 02 1/2 @ 1 12 1/2
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	95 @ 1 07 1/2
Red.....	95 @ 1 17 1/2

CORN.

While the market cannot be said to be burdened with offerings, there is more large corn in stock in this center, both Yellow and White, than for several months past. There is an easier tone in consequence, but no material decline in quotable rates. Weakness is most pronounced on Large White, owing to much of the same being damp and otherwise faulty. Small Yellow continues in light supply.

Large White, good to choice.....	1 05 @ 1 07 1/2
Large Yellow.....	1 15 @ 1 17 1/2
Small Yellow.....	1 40 @ 1 50
Eastern, in bulk (carload lots).....	1 09 @ 1 11

RYE.

Market is quiet at last quoted decline. Small quantities are reported being taken for export.

Good to choice, new.....	90 @ 95
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BUCKWHEAT.

There is virtually none on market. Quotations are based on latest reported transactions.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

Trade is far from active, either on local account or for shipment. For such varieties as are in largest supply—Lady Washingtons, Bayos and Pinks—the market presents a rather weak tone. Quotable rates, based mainly at present on asking figures, shows no pronounced declines, but to effect free sales, lower prices would have to be accepted. While there is nothing definite concerning the coming crop, indications are that it will prove heavier than was generally calculated on a few months ago.

Pea, fair to good, 100 lbs.....	3 35 @ 3 50
Small White, good to choice.....	3 35 @ 3 50
Lady Washington.....	3 15 @ 3 25
Butter, small.....	3 75 @ 4 00
Butter, large.....	— @ —
Pinks.....	2 70 @ 2 90
Bayos, good to choice.....	3 15 @ 3 35
Reds.....	3 75 @ 4 00
Red Kidneys.....	4 00 @ 4 25
Limas, good to choice.....	5 25 @ 5 35
Black-eye Beans.....	4 60 @ 4 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

Recent advices by mail from New York give the following report of the bean market, prices quoted being per 60-lb. bushel:

The market for domestic Marrow beans took quite a sharp upward turn at the close of last week, under the influence of some buying for export, and a fairly good home distributing trade; but the business has been a little quieter this week, shippers having only small orders and jobbers buying more conservatively. Still there has been a steady to firm holding on the basis of \$2.17 1/2 @ 2.20 for choicest lots. The immediate future of the market depends

quite largely on the attitude of West Indian exporters; without some demand from them it will be difficult to effect a further advance. Medium have been rather slow, but a little steadier feeling is shown at the close, with some holders asking \$2.15 for choicest lots. Pea have sold fairly, generally on the basis of \$2.27 1/2 for best stock, but within a day or two some jobbing sales of high quality are reported at \$2.30. A better movement in Red Kidney, partly for export and partly on home account, has reduced the local stocks and given the market a slightly improved tone; sales have been made at \$1.97 1/2 @ 2.00, but choice are now held generally at the latter price. White Kidney in light supply and steady; exporters have taken a few at \$2.25. Some demand for Yellow Eye, with sales at \$2.20. Turtle Soup exceedingly dull and weak. Lima quiet at \$3.52 1/2 @ 3.55. Giants about gone. More than 9560 bags foreign beans in this week; there has been fair call for prime Pea at \$1.95 @ 2.00, and for fair to strictly prime Medium at \$1.70 @ 1.85, mostly at about \$1.80 for best goods, but the inferior grades, of which a large part of the stock consists, have been dull and weak; these can be bought at \$1.40 @ 1.60. Both green and Scotch peas have ruled quiet, with prices in buyers' favor.

DRIED PEAS.

Market continues lifeless, being bare of supplies, outside of small quantities in the hands of millers and jobbers.

Green Peas, California.....	2 20 @ 2 35
Niles Peas.....	2 00 @ 2 25

WOOL.

The market is not wholly lifeless, but there is no business of wholesale volume or transactions worthy of detailed mention. Occasional transfers of small proportions are being made on local scouring account, mainly within range of quotations below noted, although in a few instances for exceptionally desirable offerings, or under exceptional circumstances, slightly higher figures than quoted have been realized. A number of dealers are confidently looking for a more active market before the end of the month.

SPRING.

Humboldt and Mendocino.....	19 @ 21
Northern, free.....	16 @ 17
Northern, defective.....	13 @ 15
Middle Counties, free.....	15 @ 17
Middle Counties, defective.....	13 @ 15
Southern Mountain, 12 mos.....	11 @ 13
Southern Mountain, free, 7 mos.....	12 @ 15
Southern Mountain, defective, 7 mos.....	10 @ 12
Oregon Valley, fine.....	20 @ 21
Oregon Valley, coarse to medium.....	19 @ 20
Eastern Oregon, choice.....	17 @ 18
Eastern Oregon, fair to good.....	12 @ 16
Nevada, as to condition.....	15 @ 17

HOPS.

The same featureless market is being experienced as previously noted. Stocks of good to choice hops are practically cleaned up on this coast, so far as offerings from producers are concerned. Common qualities are still obtainable in fairly liberal quantity, mostly Oregon, but are not sought after. Owing to prevailing inactivity, values at present are largely nominal.

Good to choice, 1899 crop.....	6 @ 9
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The following concerning the hop trade, coming through by mail of recent date, is from a New York authority:

Another week of quite cool weather has been against trade, and the volume of business has been comparatively small, which has been very disappointing to holders. An improvement in the demand was looked for before this time, but it is still in the future. There has not, however, been any giving way in the price of the better class of stock, and dealers take rather a hopeful view of the situation. They would sell the choicest lots of State and the finest of the Sonomas at 13c., but have refused to accept less. Good, useful qualities are offering at 11 @ 12c., fairish grades at 9 @ 10c. A considerable quantity of inferior stock is still in first hands, including numerous lots of Oregon that show blue mold, the result of wet weather. These are seeking custom at irregular rates, some very defective lots offering at 6 @ 7c. It is still a poor market for old odds. Interest is shown in the recent Government report on internal revenue receipts; these figures indicate an increase of over 200,000 barrels of beer for the month of April, and the first four months of this year have run considerably ahead of last year. Advices from the hop yards in this State report the vines growing slowly on account of cold weather.

HAY AND STRAW.

If there has been any change in the hay market the current week, it has been to a less depressed condition for old than was current for a week or two preceding, owing to decreased arrivals and to no corresponding decrease in the demand. Purchases are being confined almost without exception to immediate needs. New hay continues to drag at unchanged rates.

NEW HAY.

Oat, fair to good.....	4 50 @ 6 00
OLD HAY	
Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 00 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 0 @ 7 00
Stock.....	5 00 @ 6 00
Compressed.....	6 50 @ 9 50
Straw, 3/4 bale.....	25 @ 37 1/2

MILLSTUFFS.

Market for most descriptions showed much the same condition as preceding week. Bran was in increased supply, but holders of best qualities were not disposed to crowd offerings or to accept very materially reduced rates. Rolled Barley tended in favor of buyers.

Bran, 3/4 ton.....	12 00 @ 13 00
Middlings.....	15 00 @ 18 00
Shorts, Oregon.....	13 00 @ 15 00
Barley, Rolled.....	15 50 @ 16 00
Cornmeal.....	23 50 @ 24 00
Cracked Corn.....	24 50 @ 25 00

SEEDS.

Spot supplies of all descriptions of seeds quoted herewith are of light volume, and are apt to remain so for some weeks, restricting trade to small jobbing operations. Quotable values remain nominally as last noted.

Mustard, Trieste.....	3 25 @ 3 50
Mustard, Yellow.....	4 50 @ 4 75
Flax.....	2 00 @ 2 25
Per lb.	
Canary.....	3 1/4 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	— @ —

While the movement in Grain Bags is of fair volume, it is not sufficient to cause any noteworthy excitement or any flurry in values. Prices remain as last quoted, with market tolerably firm at the figures current. There is no trading of consequence to record in other Bags and Bagging, and no changes to note in quotations.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 1/4 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ 6 1/2
State Prison Bags, 3/4 100.....	— @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/4
Fruit Sacks, cotton.....	6 1/4 @ 7 1/4

HIDES, PELTS AND TALLOW.

The Wet Salted Hide market continues dull and lacks strength; prospects are that values will soon show a decline. Dry Hide market is barely steady. Horse Hides are dragging at reduced rates. Pelts are not moving readily at full current figures. Tallow market is very quiet.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10	9
Medium Steers, 48 to 56 lbs.....	9	8
Light Steers, under 48 lbs.....	9	8
Heavy Cow Hides, over 50 lbs.....	9	8
Light Cow Hides, under 50 lbs.....	9	8
Wet Salted Kip.....	9	8
Wet Salted Veal.....	9	8
Wet Salted Calf.....	10	9
Dry Hides.....	18	15
Dry Kip and Veal, 11 to 16 lbs.....	17	13
Dry Calf, under 4 lbs.....	20	16
Salted Horse Hides, large.....	2 50 @ —	—
Salted Horse Hides, medium.....	2 00 @ —	—
Salted Horse Hides, small.....	1 00 @ —	—
Dry Horse Hides, large.....	2 00 @ —	—
Dry Horse Hides, small.....	75 @ 1 00	—
Dry Colts' Hides.....	50 @ 75	—
Pelts, long wool, 3/4 skin.....	1 00 @ 1 25	—
Pelts, medium, 3/4 skin.....	70 @ 90	—
Pelts, short wool, 3/4 skin.....	35 @ 60	—
Pelts, shealing, 3/4 skin.....	20 @ 35	—
Deer Skins, best summer.....	27 1/2 @ 30	—
Deer Skins, good medium.....	20 @ 22 1/2	—
Deer Skins, thin winter.....	— @ 10	—
Elk Hides.....	10 @ 12	—
Tallow, good quality.....	4 1/4 @ 4 1/2	—
Tallow, No. 2.....	3 1/4 @ 4	—
Goat Skins, perfect.....	30 @ 37 1/2	—
Goat Skins, damaged.....	10 @ 20	—
Kid Skins.....	5 @ 10	—

HONEY.

There is not much honey on market, either old or new. Small quantities of new Comb and Extracted are going to local trade at comparatively stiff values. In some instances, especially for Comb, an advance on best figures warranted as a quotation are being realized. To secure export orders, however, of anything like wholesale proportions, prices below noted would have to be materially shaded.

Extracted, White Liquid.....	6 1/2 @ 7
Extracted, Light Amber.....	6 @ 6 1/2
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	11 1/2 @ 12 1/2
Amber Comb.....	8 @ 10

BEESWAX.

Stocks are light, with no lack of inquiry, and market firm at current rates.

Good to choice, light, 3/4 lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Beef was without quotable change, demand not being very brisk. Veal was in light receipt and was favored with a firm market. Mutton ruled steady at the improved range of prices of preceding week. Lamb brought as a rule full current rates. Hogs were not in heavy receipt and sold at generally unchanged prices.

Beef, first quality, dressed, net lb.	6 @ 6 1/2
Beef, second quality.	5 1/2 @ 6
Beef, third quality.	5 @ 5 1/2
Mutton—ewes, 6 1/2 @ 7c; wethers.	7 @ 7 1/2
Hogs, hard grain fed, medium.	5 1/2 @ 5 1/2
Hogs, small, fat.	5 1/2 @ 5 1/2
Hogs, large, hard.	5 1/2 @ 5 1/2
Hogs, acorn-fed.	— @ —
Hogs, feeders.	5 @ 5 1/2
Hogs, country dressed.	6 @ 6 1/2
Veal, small, lb.	8 @ 10
Veal, large, lb.	7 @ 8 1/2
Lamb, spring, lb.	8 @ 8 1/2

POULTRY.

There was a marked increase in arrivals of Eastern poultry, five carloads being landed here the current week, and market was easier, domestic product selling at lower average figures than last quoted. Market was especially weak for common old and small young stock.

Turkeys, dressed, lb.	— @ —
Turkeys, live hens, lb.	11 @ 12
Turkeys, live gobblers, lb.	10 @ 11
Hens, California, lb. dozen	4 00 @ 5 00
Roosters, old.	3 75 @ 4 00
Roosters, young (full-grown).	4 50 @ 5 50
Fryers.	3 50 @ 4 00
Broilers, large.	3 00 @ 4 00
Broilers, small.	2 00 @ 2 50
Ducks, old, lb. dozen	4 50 @ 5 00
Ducks, young, lb. dozen	5 00 @ 5 50
Geese, lb. pair.	1 25 @ 1 50
Goosings, lb. pair.	1 25 @ 1 50
Pigeons, old, lb. dozen	1 50 @ 1 75
Pigeons, young	1 50 @ 1 75

BUTTER.

Stocks of choice to select fresh are on the decrease, but demand also showed reduction. The market for best qualities was firm, however, without being materially higher. Common to medium qualities were in quite fair supply and were offered rather freely at the rates ruling.

Creamery, extras, lb.	18 1/2 @ —
Creamery, firsts.	18 @ —
Creamery, seconds.	17 1/2 @ —
Dairy, select.	17 1/2 @ 18
Dairy, seconds.	16 1/2 @ 17
Dairy, soft and weedy.	— @ —
Mixed store.	14 @ 15
Creamery in tubs.	18 @ 20
Pickled Roll.	18 @ 20
Parkin, California, choice to select.	18 @ 20
Parkin, common to fair.	16 @ 17

CHEESE.

Spot supplies of domestic product are of very moderate volume, especially of small sizes or Young Americas, these being in much lighter stock than regular flats. Demand is good and market firm, with prospects of higher prices soon ruling. New Eastern cheese is beginning to arrive, but is not offering freely.

California, fancy flat, new.	9 @ —
California, good to choice.	8 1/2 @ —
California, fair to good.	8 @ —
California Cheddar.	— @ —
California, "Young Americas".	9 @ 10

EGGS.

The market continues quiet, as is to be expected, but choice to select fresh are commanding steady rates, receivers having no trouble in securing for this description full current figures. Off qualities are meeting with a weak and dragging market, and the proportion of arrivals of this sort is on the increase.

California, select, large, white and fresh.	16 1/2 @ —
California, select, irregular color & size.	15 @ 16
California, good to choice store.	13 1/2 @ 14 1/2
Eastern, as to section and grading.	15 @ 16 1/2
Eastern, cold storage.	— @ —

VEGETABLES.

Most kinds in season were in tolerably free receipt and the general drift of prices was in favor of the consumer. Rhubarb proved an exception, the supply of which was light and hardly equal to demand. Onions were in increased stock and averaged lower than last week. Tomatoes and Cucumbers went at reduced rates.

Asparagus, lb. box.	75 @ 2 00
Beans, String, lb.	3 1/2 @ 4 1/2
Beans, Wax, lb.	4 @ 5
Cabbage, choice garden, lb. 100.	40 @ —
Cauliflower, lb. dozen	50 @ —
Cucumbers, Bay, lb. box.	1 75 @ 2 00
Egg Plant, lb.	6 @ 8
Garlic, lb.	4 @ 5
Green Corn, lb. doz.	12 1/2 @ 30
Onions, Red, Cal., good to choice.	75 @ 90
Onions, Yellow Danver, lb. cental.	1 00 @ 1 15
Peas, Sweet, garden, lb.	1 1/2 @ 2 1/2
Peas, Green, sack	50 @ 1 00
Peppers, Green Chile, lb.	5 @ 7
Peppers, Bell, lb.	— @ —
Rhubarb, lb. box.	50 @ 1 00
Squash, Summer, lb. large box.	1 00 @ 1 25
Tomatoes, lb. box.	50 @ 75
Tomatoes, Bay, lb. box.	— @ —

POTATOES.

The shipping demand was of slim volume and the market in consequence weak most of the time since last review. Sev-

eral States which had been buying heavily in this market have shut out California products temporarily, owing to the Bubonic plague scare. Prospects are favorable, however, for the market soon being restored to normal conditions. For the past day or two purchasing on Government account has caused firmer prices to rule.

Burbanks, River, lb. cental.	40 @ 80
Burbanks, Bay counties, lb. cental.	50 @ 80
Burbanks, Humboldt.	— @ —
Burbanks, Oregon.	50 @ 85
River Reds.	— @ —
Early Rose.	— @ —
Garnet Chile.	— @ —
New Potatoes, lb. cental.	40 @ 75
Sweet, River, lb. cental.	— @ —
Sweet, Merced.	— @ —

The Fruit Market.

FRESH FRUITS.

Mid-summer fruits are beginning to arrive in wholesale quantity, but the market has not yet been burdened with desirable qualities of any variety of deciduous fruit other than Cherries. Royal Apricots are coming forward rather freely, but it is the exception where they are sufficiently ripe to be really palatable; the Pringle variety has about had its run for the season. Apples, Peaches and Plums of high grade were in light supply, but common sorts were offered freely. Berries of nearly all descriptions were plentiful and prices for the same were in the main at a low range, Gooseberries and Currants being the exceptions. The Cannery's Association names the following prices for green fruit:

Lowell's free 2 1/2-inch and over.	\$20 00
Muir free 2 1/2-inch and over.	17 50
Other free 2 1/2-inch and over.	15 00
Philips clings 2 1/2-inch and over.	25 00
Tuscan clings 2 1/2-inch and over.	22 50
Other clings 2 1/2-inch and over.	22 50
White clings 2 1/2-inch and over.	15 00
White clings 2 1/2-inch and over.	20 00
Bartlett pears 2 1/2-inch and over.	20 00
Bartlett pears 2 1/2-inch and over.	15 00
Apricots, 12 to lb.	20 00
Plums.	12 00 @ 15 00
Currants, lb. chest.	2 50
Gooseberries, lb. lb.	2 1/2

These figures are of course subject to change later on, and will be regulated by conditions which will develop as the season advances.

Apples, fancy, 4-lb. box.	— @ —
Apples, good to choice, lb. 50-lb. box.	75 @ 1 00
Apples, common to fair, lb. 50-lb. box.	50 @ 65
Apricots, Royal, lb. lb.	35 @ 60
Apricots, Pringle, lb. box.	— @ —
Cherries, Royal Anne, lb. box.	40 @ 65
Cherries, Black Tartarian, lb. box.	35 @ 50
Cherries, White and Red, lb. box.	25 @ 40
Cherries, in bulk, lb. lb. Royal Anne, 4 @ 5 1/2; Black Tartarian, 2 1/2 @ 4c; Red and White, 2 @ 3c.	
Gooseberries, common, lb. lb.	3 1/2 @ 4
Gooseberries, English, lb. lb.	6 @ 7
Raspberries, lb. chest.	4 00 @ 7 00
Blackberries, lb. crate.	60 @ 75
Blackberries, lb. chest.	4 50 @ 7 00
Logan Berries, lb. chest.	5 00 @ 6 00
Cherry Plums, lb. box.	25 @ 40
Clyman Plums, lb. crate.	60 @ 75
Currants, Red, lb. chest.	3 50 @ 5 00
Peaches, lb. box.	50 @ 1 00
Pears, Madeline, lb. box.	25 @ 40
Figs, Black, lb. crate.	75 @ 1 00
Strawberries, Longworth, lb. chest.	7 00 @ 9 00
Strawberries, Large, lb. chest.	4 00 @ 6 00

DRIED FRUIT.

The most noteworthy feature in the market for cured and evaporated fruits is the rapid manner in which Prunes have been recently moving outward. Present stocks of this fruit in the State are estimated as not to exceed forty carloads, and some place the quantity now on hand at as low as thirty carloads. But for the fact that remaining supplies are more firmly held, there would probably be a speedy clean-up. There is an advance of fully a quarter of a cent per pound on the few sizes which are still quotable. At the firmer figures current, buyers are not taking hold so freely, but no fears are entertained that there will be any noteworthy amount of Prunes offering at close of the season. Business in other dried fruits is sluggish, and the general tone of the market is weak. Especially is strength lacking on Apples and Peaches, supplies of both kinds being sufficiently heavy to admit of considerable movement, but transfers are difficult to effect, even at low figures, most jobbers and retailers having in their opinion no necessity for making further purchases until new crop comes upon the market. Supplies of Pears and Plums are of light proportions and are not giving holders any uneasiness, asking figures remaining virtually as previously quoted. In new crop futures the only talk is of Apricots, and no evidence of there being much beyond talk in this line at present. In April and May there was considerable contracting for July-August deliveries of Apricots on both European

and Eastern account at 7 @ 7 1/2c, delivered at primary points, but for the past week or two neither packers nor shippers, sellers nor buyers, have shown any special inclination to contract at figures likely to lead to business. There are reports of some packers and dryers being willing to accept 6 1/2c. for limited quantities of late deliveries of 'cots.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, lb.	9 @ 10
Apricots, Royal, fancy.	10 @ 11
Apricots, Moorpark.	12 @ 13
Apples, in 50-lb boxes, rings, pressed, fancy.	5 1/4 @ 5 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.	4 1/2 @ 5
Figs, White, fancy pressed.	5 1/2 @ 3 1/2
Peaches, unpeeled, good to choice.	4 1/2 @ 5
Peaches, unpeeled, fancy.	6 1/2 @ 7 1/2
Peaches, peeled, in boxes.	12 @ 15
Pears, unpeeled Bartlett's, halved, fancy.	9 @ 9 1/2
Pears, halved, unpeeled Bartlett's.	6 1/2 @ 7 1/2
Pears, quartered, unpeeled Bartlett's.	6 1/2 @ 7 1/2
Plums, Black, pitted.	6 1/2 @ 7 1/2
Plums, White and Red.	7 @ 8
Prunes, in sacks 40-50s.	4 @ 4 1/2
50-60s.	3 1/2 @ 3 3/4
60-70s.	3 1/2 @ 3 3/4
70-80s.	2 1/2 @ 3
Prunes in boxes, 1/2c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.	— @ —
4 sizes Santa Claras and equal.	— @ —
4 sizes San Joaquin and Northern.	— @ —
Prunes, Silver.	4 @ 6

COMMON SUN-DRIED.

Apples, sliced.	3 @ 4
Apples, quartered.	3 1/2 @ 4 1/2
Figs, Black.	2 @ 3
Figs, White.	3 @ 3 1/2
Peaches, unpeeled.	3 @ 4

Advices by recent mail from New York furnish the following review of the dried fruit market in the East:

Demand for evaporated apples has been light, and market weakened to 5 1/2c. for prime, though at the close, with a little more inquiry, holders are generally asking 6c., but it is rather extreme; choice and fancy job fairly at former prices. Grades under prime quiet. Sun-dried apples very dull and weak, with outside quotations extreme; some Southern quarters in bags are obtainable down to 3 1/2c, and scarcely anything shows quality to exceed 4c., with 4 1/2c. about top for State and Western quarters. Chops and waste held about steady, but outside prices extreme and only realized for choice heavy packed stock in a small way. Raspberries held about steady. Cherries firm. California fruit selling rather slowly and outside figures extreme.

Apricots, Cal., Moorpark, lb.	14 @ 16
Apricots, Cal., Royal, lb.	12 1/2 @ 13 1/2
Peaches, Cal., peeled, lb.	16 @ 20
Peaches, Cal., unpeeled, in hxs, lb.	7 @ 8 1/2
Peaches, Cal., unpeeled, in bags, lb.	6 1/2 @ 8
Prunes, Cal., lb.	3 1/2 @ 7

RAISINS.

While there is some movement in Raisins, business is far from being of wholesale proportions, and prices are as irregular as for some time past. Practically all the transfers from second hands are at cuts from official card rates, but concessions are more marked in some instances than others, depending on the quantity and condition of the goods and the anxiety of the holder.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, lb. box.	1 60 @ —
do do 2-crown, lb. box.	1 50 @ —
Valencia Layers, lb. 20-lb. box.	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.	6 1/2 @ —
Loose Muscatel, seedless.	5 @ —
Pacifics.—2-crown loose Muscatel, 5 1/2c; 3-crown, 6c; 4-crown, 8 1/2c; seedless, 4 1/2c.	
Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.	

(Above prices for loose raisins are for 50-lb. boxes.)

Thompson Seedless.—Bleached fancy, lb., 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, lb., 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.

Loose Valentias.—Fancy, lb., 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.

Valencia Clusters.—Fancy, lb., 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

The Orange season is about ended, although there is some of this fruit still offering. Demand is very limited, however, and is mainly for late varieties suitable for shipment, the market for this description ruling moderately firm. Lemon market showed a little more activity, owing to the warm weather, but quotable prices showed no improvement; ordinary qualities dragged at low rates. Limes were in increased demand, but were not quotably higher.

Oranges—Navel, fancy lb. box.	— @ —
Navel, good to choice.	1 50 @ 2 50
Navel, common to fair.	1 25 @ 1 50
St. Valentias.	1 00 @ 3 00
St. Michaels.	1 00 @ 2 50
Mediterranean Sweet.	75 @ 2 25
California Seedlings.	50 @ 1 75
Lemons—California, select, lb. box.	2 25 @ 2 50
California, good to choice.	1 50 @ 2 00
California, common to fair.	75 @ 1 25
Limes—Mexican, lb. box.	4 00 @ 4 50
California, small box.	50 @ 1 00

NUTS.

The wholesale market for Almonds and

Walnuts is wholly lifeless, with few of either kind now offering. Peanuts are commanding steady rates, with supplies of very moderate volume.

California Almonds, shelled.	14 @ 17
California Almonds, paper shell, lb.	10 @ 12
California Almonds, soft shell.	8 @ 9
California Almonds, hard shell.	4 @ 5
Walnuts, White, soft shell.	9 @ 10
Walnuts, White, California, standard.	7 @ 8
Chestnuts, California Italian.	8 @ 10
Peanuts, California, fair to prime.	5 @ 6
Peanuts, Eastern, hand-picked.	6 @ 6 1/2
Pine Nuts.	5 @ 6

WINE.

A quiet market is noted for wines, most of the wholesale dealers being fairly stocked for the time being. In fact, some claim they have all the wine they can conveniently carry or have room for, but they manage to find a place for all the new stock they can secure at their range of prices. Quotable rates for dry wines of 1899 vintage continue unchanged at 14 @ 16c wholesale, mainly San Francisco delivery, although in some instances these figures are paid by San Francisco dealers for deliveries at interior points. Some favorite marks and superior qualities are held at higher rates than above noted, but such prices are only obtainable in a jobbing way from small or outside buyers.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/4 sacks.	122,674	5,999,476
Wheat, centals.	91,665	6,502,538
Barley, centals.	27,755	4,960,283
Oats, centals.	10,990	769,019
Corn, centals.	2,405	139,921
Rye, centals.	475	90,522
Beans, sacks.	1,168	362,290
Potatoes, sacks.	18,840	1,187,156
Onions, sacks.	5,804	162,258
Hay, tons.	2,397	147,112
Wool, hales.	1,169	54,207
Hops, hales.	—	10,452

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/4 sacks.	85,592	4,051,066
Wheat, centals.	55,473	5,685,605
Barley, centals.	73,135	3,863,128
Oats, centals.	—	45,123
Corn, centals.	317	19,793
Beans, sacks.	136	26,148
Hay, bales.	1,777	135,951
Wool, pounds.	—	4,321,433
Hops, pounds.	3,230	1,067,007
Honey, cases.	—	3,581
Potatoes, packages	945	72,155

California Dried Fruit at New York.

NEW YORK, June 6.—Evaporated apples, common, 4 1/2 @ 5c; prime wire tray, 5 1/2 @ 6c; choice, 6 1/2 @ 7c; fancy, 7 1/2 @ 8c. California dried fruits dull, but as a rule steadily held. Prunes, 3 1/2 @ 7c. Apricots, Royal, 12 1/2 @ 14c; Moorpark, 15 @ 18c. Peaches, unpeeled, 6 @ 9c; peeled, 16 @ 20c.

FREDERICK MAURER, 22 yrs. with Western Sugar Refining Co. W. C. BARNARD, 18 yrs. with H. DUTARD.

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330 Market Street, San Francisco, Cal.



THE IRRIGATOR.

What Can be Done on Land Moist From Underflow.

D. R. DEMING in Tulare Times.

At your request I give you a few items which may be of interest to your readers, as to what may be grown upon the land among the trees of a young orchard. Conditions of soil, moisture, either natural or artificial, and the energy of the owner may be large factors in producing a crop upon the land while the trees are growing. Perhaps, I may best tell my method by showing how East Lynne fruit and berry farm has come to its present condition. A number of years ago the question, "What would you do with 20 acres of land in Tulare county?" was asked by your paper. Among the answers I noticed that you advocated a mixed orchard, with alfalfa and farm products for home consumption. At that time my place was reclaimed overflow land upon which grew alfalfa, wheat hay, corn, potatoes, stock, etc.

I began my fruit business, plot at a time each year, until now the major part of the place is one fruit and berry plant. In starting a plot of peaches or prunes, I put my rows of trees 20 feet apart and the trees in the rows 24 feet apart with a berry bush—either blackberry, raspberry or gooseberry between the trees. This method did not interfere with cultivating the land each way. The second year the berry bush began to bear and pay part of the expenses, while between the rows of trees I grew a crop of potatoes followed by corn each year.

To be more explicit, I have a plot of 110 Robe de Sargent prunes set out two years ago with vines between the trees. The land was in alfalfa. I plowed strips through the field 6 feet wide for the rows of trees. Three crops of hay were cut off the land during the summer. During the winter the alfalfa was plowed out and last year a crop of potatoes followed by corn grew between the rows of trees. This year the raspberry and blackberry vines between the trees are in full bearing while between the rows a crop of peas is ready for use with watermelons planted to follow them. I do not think the trees have suffered in the least nor do I think they can be excelled in vigor and growth by any in the county for their age.

Another plot of two-year old peach trees just coming into bearing was farmed in similar manner last year. The ground produced a good crop of potatoes followed by a late crop of corn, while in the rows between the trees and vines grew tomatoes. As tomatoes sold at from 2 cents to 3 cents per pound, these plants paid as much as the trees would have had they been in good bearing. This year both vines and trees are full of fruit and the space between the rows of trees is planted to potatoes and will be followed by a late crop of some kind.

Still another plot of three-year-old trees farmed in the above manner is now heavily loaded with fruit, while the berry bushes between the trees look like young hay stacks, are very full of blossoms and yet the ground between the rows which has been cultivated well until the present time is green with volunteer potatoes.

It is understood that as soon as the trees bear full crops nothing more is planted and as the paying life of a raspberry is only from four to five years they also go leaving a bearing orchard.

I have an acre of raspberries and blackberries set out last year in rows 12 feet apart. Between the rows last year I grew beans and melons. This

year the vines will bear one-half a crop while between the rows are growing two rows of early potatoes six inches high with a row of cantaloupes planted in the middle. The potatoes will be dug before the vines spread and the vines can be thrown back so as not to interfere with berry picking.

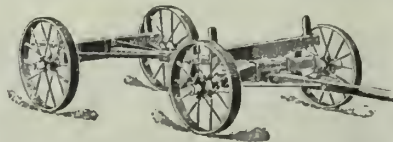
I think the above will give your readers an idea of my method of orchard growing. Two years ago, while Major Berry was trying to raise pumpkins in his big orchard, I venture to say that my berries and garden truck grown between the trees of the orchard brought more than all his pumpkins.

When I began farming thus, an old orchardist neighbor remarked that I might be good at other business, but I was no orchardist. To-day my orchard is free from incumbrance and is paying good interest upon twice the price the farm would sell for. To accomplish this I have the best of sub-irrigated soil which produces abundantly so the trees never suffer, but rather make too great a growth.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

- 649,913.—EXPLOSIVE COMPOUND—S. Clark, Gold Hill, Ogn.
650,301.—PASTE BOTTLE—G. P. Cragin, Spokane, Wash.
650,302.—PASTE BOTTLE—G. P. Cragin, Spokane, Wash.
650,303.—GRATER—E. Crupe, S. F.
650,308.—CAMERA—T. J. Demorest, Garfield, Wash.
650,043.—RAZOR—F. W. Gotterke, S. F.
650,354.—ICE TANK FLOOR—Graham & Pierce, Sacramento, Cal.
650,147.—UNDER REAMER—E. A. Hardison, Santa Paula, Cal.
650,317.—DUMPING BARTER—E. A. Hardison, Santa Paula, Cal.
650,318.—CASING PERFORATOR—E. A. Hardison, Santa Paula, Cal.
650,077.—PIPE WRENCH—W. T. Hatten, Canyon City, Ogn.
650,320.—PUZZLE MAP—W. Hepfinger, Montezano, Wash.
650,148.—SKIRT SUPPORTER—W. Hill, Los Angeles, Cal.
650,046.—INKSTAND—P. D. Horton, Oakland, Cal.
650,323.—BUBBLE BLOWER—P. D. Horton, Oakland, Cal.
650,324.—BUBBLE BLOWER—P. D. Horton, Oakland, Cal.
650,263.—CYLINDER COCK—L. M. Morrow, Wasco, Ogn.
650,081.—FENDER FOR CULTIVATORS—W. P. Murphy, San Jose, Cal.
649,946.—SAWMILL CARRIAGE—H. Newton, Centralia, Wash.
650,083.—WATER HEATER—Pattison & Barlow, San Luis Obispo, Cal.
650,114.—REMOVING SURPLUS METAL FROM COATED ARTICLES—G. Porter, S. F.
650,138.—CONCENTRATOR—C. A. Smith, Los Angeles, Cal.
650,283.—LOGGING MACHINE—E. Turney, Los Angeles, Cal.
650,057.—ELECTRIC CIRCUIT CONTROLLER—A. L. Waters, S. F.
650,286.—ROTARY ENGINE—W. W. Watkins, Yuma, Ariz.
650,070.—CRIBBAGE BOARD—R. Whitman, Oakland, Cal.
650,289.—SOLDERING MACHINE—Winsor & Smith, S. F.



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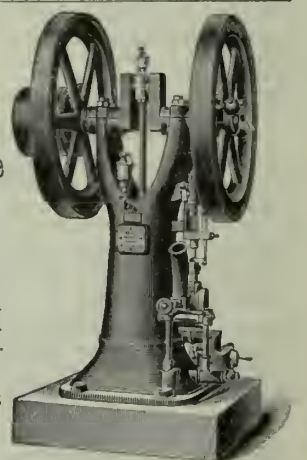
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The Debris Question.

TO THE EDITOR:—Can you reproduce the article published in the San Francisco Call May 25, 1900, entitled "Condition of Hydraulic Mining," by W. S. Green. The Sacramento valley farmers will highly appreciate it if you do this favor.

Wheatland, May 29. D. P. DURST.

MR. GREEN'S LETTER.

The following is the communication which Dr. Durst desires to see in our columns:

It seems strange that San Francisco refuses to understand the conditions surrounding the hydraulic miners and the residents of the valley whose property has been destroyed or is threatened with destruction by debris from the mines.

You congratulate your readers in your issue of Tuesday on the promised ending of the prolonged controversy between these interests, and cite the fact that work has been authorized to be commenced on a dam on the Yuba, recommended by the California Debris Commission for the purpose, as that Commission expressly said, of impounding matter already in the streams, and you conclude your editorial as follows:

"To the men who have achieved the good results now in sight much credit is due. The strife between the miners in the mountains and the people of the valleys was hurtful to the best interests of California in many ways and it was a matter of general congratulation when they agreed upon a programme which promised to open a way for hydraulic mining while at the same time securing the farms along the streams from harm. The outlook is now encouraging and it is to be hoped there will be no further hitch in the work."

Now, there has been no programme agreed upon by which one monitor may run one minute, and there will be no such programme.

Many years ago the detritus from the hydraulic mines began filling up the rivers and covering up the lands, including many homes, and even the sacred spots where rested the dead, and the valley people were compelled to seek redress in the courts. First came the Keyes case, which continued for several years, and this was followed by the noted Gold Run case tried at Sacramento by Judge Temple, and finally the celebrated case of Woodruff against the North Bloomfield, in which Judge Sawyer of the United States Circuit Court laid down the law in so masterful a manner as that no word of it has since been controverted. Judge Sawyer said that no man had a right to injure another in person or property for his own aggrandizement, and further, that no power on earth could grant authority to one person to injure another.

After getting such a decision and an acknowledgment from all men that it was the law; after erecting such an insurmountable wall around their rights, it would be idiotic on the part of the Anti-Debris Association, representing the valley, to voluntarily make a gap to allow the entrance of any wooden horse, even if recommended by such oracles as the great metropolitan press. All experiments must be made

at the risk of the party seeking the benefit.

When Mr. Caminetti proposed his law establishing the Debris Commission it was sought to get the indorsement of the Valley Association, but while that Association did not oppose it did not indorse, but was content to rest the matter where Judge Sawyer put it—content with the knowledge that Congress had no right to delegate any authority to any Commission to license the destruction of property. If the miner who was in search of a dump wanted to get the approval of a Government engineer for a contrivance by which he could do it without injury to any one, the Association had no fault to find; but it could become no party in any shape or form to its construction; could take no part of the responsibility of a failure.

Neither the Anti-Debris Association nor any one authorized to speak for the valley interests has asked for the construction of the dam on the Yuba of which you speak in the editorial, although the avowed purpose was the retention of the matter already in the streams; nor has it expressed any opinion of what it will accomplish.

Now, then. Every man in the valley feels an interest in the success of every branch of mining, and every expression at meetings of the Association has been to let it go on to the very verge of damage. That it has acted on the motto of Davy Crockett—"Be sure you are right, then go ahead"—has been proven by the fact that in all the numerous suits it has always been right. No objection has been made to the expenditure of money by the State or the Federal governments to help the miners along, but when plans are being made it does not intend to be committed so that it may not go into court and assert its rights.

Individually I have taken as much time and have given as much thought to plans for the safe impounding of the debris as any unsalaried person, and I am sure no man in the State would be more pleased than I at some solution of the problem, but I would not compromise the valley on any plan, however much it might meet my judgment, for you see my judgment might be at fault, and they are not the people to stand the consequences of a faulty judgment.

Now, to repeat, it is the miner and not the valley man who is in want of a dump, and the latter has nothing in the wide world to do with finding it for him. There is no use in the world in juggling with the situation, and San Francisco had just as well understand it—a thing, however, which she has persistently refused to do.

W. S. GREEN.

Colusa, May 23, 1900.



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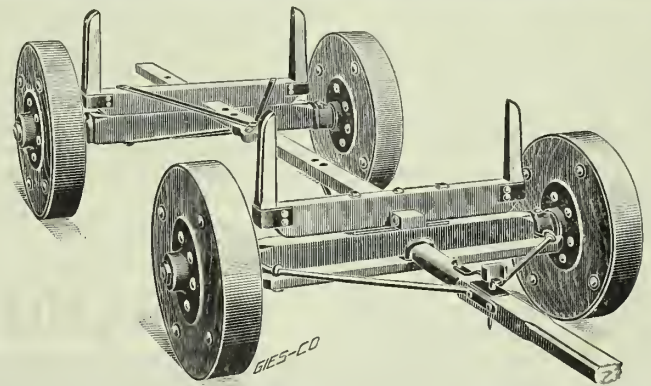
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Patrons of Husbandry.

Co-operation in the Sale and Manufacture of Farm Products.

TO THE EDITOR:—In what way can business co-operation in the sale of farm products be made most available to members of the Grange?

A discussion of this question enters a field but little traveled by investigators of economic questions relating to the farm. While this feature of the Grange was contemplated by the founders of the Order, and given a place in the Declaration of Purposes, it was not made prominent in the organization of Granges and has been given but little attention by the Order. The leading obstacle in the way of its adoption is the impossibility of grading farm products upon separate farms in a way to satisfy the critical demands of the market. A single poor lot in a carload would cause such shrinkage in the price paid for the whole as to seriously affect the shipper of good products. Another hindrance in this matter is the difficulty in inducing farmers to enter into an arrangement, and stick to it, that may cause temporary loss on their part, but in the end result in permanent financial advantage. We have seen this illustrated in efforts to regulate the sale of milk in large cities. Farmers will need to become accustomed to making a uniform product, and everyone who attempts to co-operate pack his product fairly and honestly, before much progress can be made in this matter. Under present conditions we think co-operation in business matters might be secured to some extent in the sale of milk and fruit. As we have previously said, the prospect of success will largely depend upon the quality from top to bottom, and upon the loyalty of those entering the arrangement to the object sought in spite of seeming temporary disadvantage.

The discussion may bring out additional features in this matter, and will certainly tend to emphasize some of the points we have suggested. If any co-operative business arrangement can be successfully carried out in the sale of farm products, the Grange is the proper place in which to discuss details and shape its course.

HOW CAN IT BE DONE?—In what way can business co-operation in the manufacture of supplies now purchased, or of products sold, be made available to members of the Grange?

This feature of business co-operation in the Grange has been discussed less than any other feature of the general topic, and yet it is prolific in possibilities. We do not advocate the establishment of extensive manufacturing plants, conducting business on a large scale, for the reason that such ventures require great capital and able financial management, attended with great risk. In fact, we believe the instances are very rare where extensive co-operative business enterprises under the direction of the Grange have been reported as successful, and, if we except mutual fire and life insurance, such instances are rare under any co-operative management. Such matters seem specially adapted to local application, where expenses can be controlled and the condition of the business constantly known by all co-operating in it. In this manner creameries, cheese factories, condensed milk factories, canning establishments, sugar beet factories, fruit dryers and pickle factories are frequently of great benefit to the producers, and their establishment has been the result in thousands of instances of agitation of the subject in the Grange. The capital to build and equip such factories will generally be forthcoming from some source when the farmers have co-operated in an agreement to provide the material for its operation. Many country towns would be greatly benefited, and the prosperity of the farmers would be greatly promoted, by the establishment of something of this kind, which would distribute a regular monthly income among the patrons.

FARM SUPPLIES.—In the matter of supplies, there is less opportunity for

co-operation in manufacture, but there is one very important opportunity that should not be neglected. We refer to the purchase of chemicals and mixing them upon the farm, in place of buying ready-mixed fertilizers. The frequent assertion that it requires costly machinery and deep scientific knowledge to do this has been effectually dispelled. The ordinary farmer can make a liberal saving by purchasing chemicals and manufacturing his fertilizers, and should co-operate with members of his Grange in this matter. The experiment station will furnish specific directions for it.

GRANGE WORK.—We offer no apology for suggesting these intensely practical subjects, for in some Granges there is a tendency to confine the discussions to literary and sentimental topics, to the exclusion of practical topics bearing upon farm economy. We think this fact a sufficient reason for devoting considerable time to such topics as we have here considered, and expect beneficial results will follow their consideration in subordinate Granges. We must secure material, as well as mental and fraternal, advantages from our connection with this grand Order, although we expect the latter to far outstrip the former in the advantages derived through association in the Grange.

The subordinate Grange that devotes its entire energy to the financial, legislative, fraternal or educational work of the Order is not successful in the highest degree as a farmers' organization, but the Grange that recognizes the importance of each of these features and assigns it a proper place in its work is the one that is fulfilling its mission the best and conferring the greatest benefit upon the locality in which it is located. We should see to it that the financial feature is not neglected in this arrangement, but should be equally as interested in maintaining the prominence of other features of Grange work to which we have referred. J. S. TAYLOR, Lecturer Cal. State Grange.

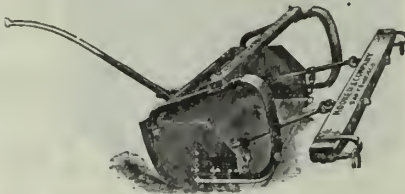
Napa, Cal., June 1.

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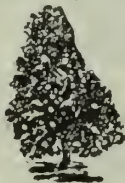
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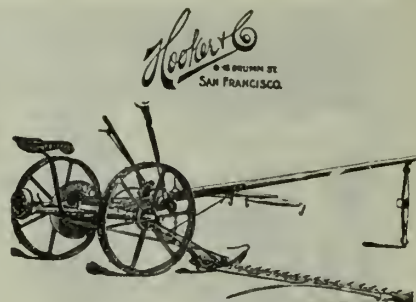
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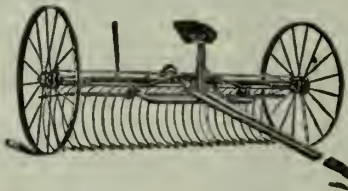
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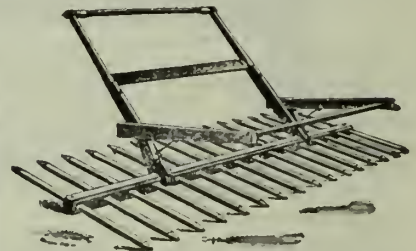
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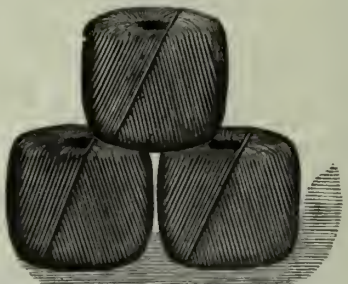
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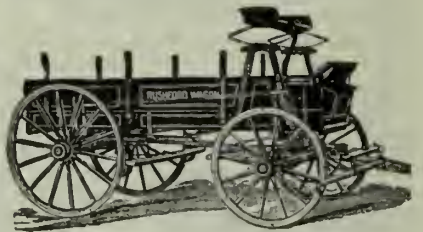
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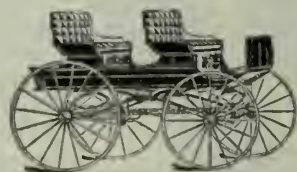
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California climate is a little hard on harness, unless it is well taken care of. The Tree and Vine says that G. W. Tarleton, pioneer orchardist of San Jose, several years ago discovered by accident a very fine way of cleaning up and putting harness in order. He had been spraying with kerosene emulsion, and by chance dropped some old straps into his spray barrel, where they remained for some time, and, on removing them, was pleased to see how easily the dirt and grease came off, leaving the leather clean and pliable. While in this condition he applied some harness oil and the pliability became permanent. On request, he gave our contemporary the details of his method, which he has followed ever since.

"Take one bar of good strong washing soap; dissolve in a quart of water and bring to boiling. To this add a pint of kerosene oil and stir; beat and churn the whole until it combines into a creamy emulsion. Have a tub of quite warm water, into which mix the emulsion, and into this place the harness and let it soak some time; then with a stiff brush rub and brush the straps thoroughly and they will come clean very easily. Let it dry a little, until it seems dry on the outside, and then apply the harness oil. I use either neat-foot or fish oil, and think the fish oil just as good. I mix about one-fifth kerosene into the oil and then give the leather a good oiling. To make it black mix a little lampblack up with the kerosene and mix it with the oil. In fixing leather carriage tops I find it necessary to wash over several times with the emulsion to get it damp enough to oil; then apply the oil as in the harness. I find old straps, which had become so brittle as to crack seriously when bent,

are restored to their original softness and pliability by the treatment. If a new harness is treated twice a year in this way, it will always keep soft and in good order. I have some old harness which I thought almost ruined, restored to good looks and service in this way, and it ought to be generally known."

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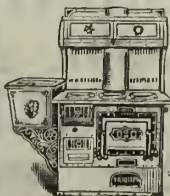
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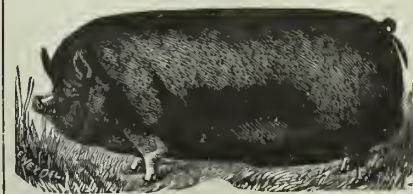
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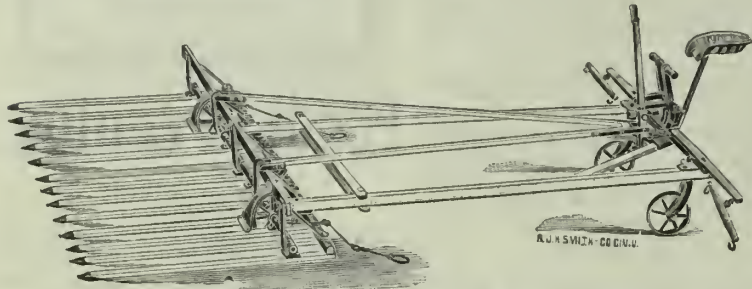
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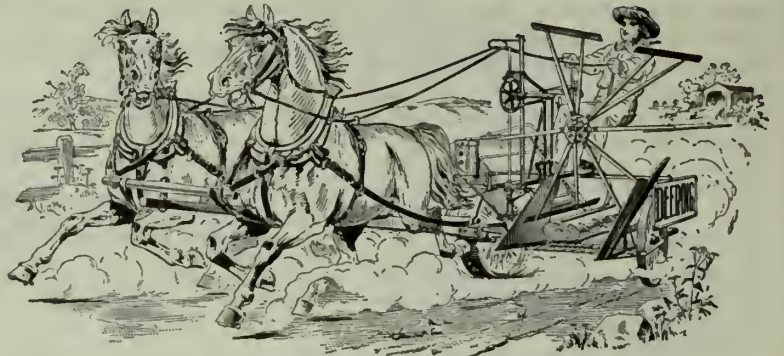
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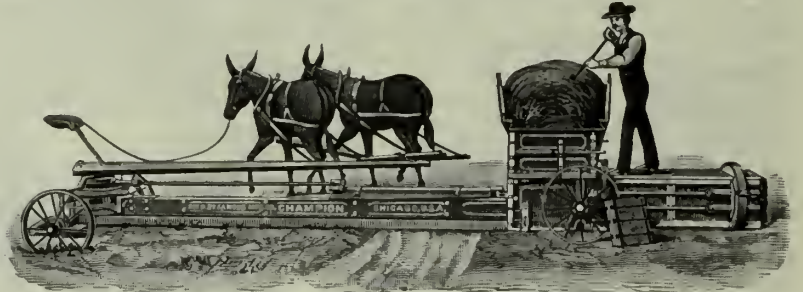
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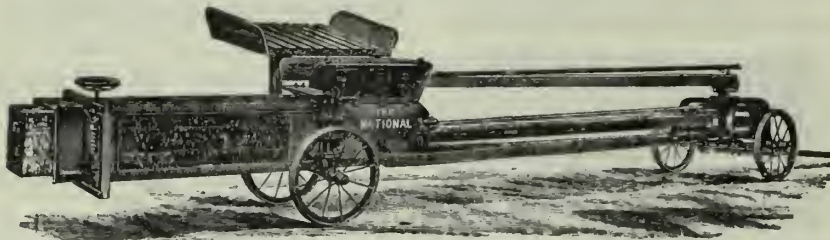
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Vol. LIX. No. 25

SAN FRANCISCO, SATURDAY, JUNE 16, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

The Mistletoe on the Apricot.

When Mr. R. D. Hicks of St. Helena was pruning his apricot orchard last winter, he was surprised to see that a mistletoe plant had established itself and was growing as vigorously as though it was established on an oak. The fact impressed him as so interesting that he sent a part of the branch carrying the mistletoe to the PACIFIC RURAL PRESS, and it was photographed for us by Dr. R. H. Loughbridge of the University of California. From his photographs the halftones upon this page were made. It will be noticed in the larger plate that the mistletoe has established itself upon the upper side of an old limb of the apricot, where the bark was rough and offered opportunity for the germination of the seed, which was carried from some adjacent forest and lodged there. The striking appearance of the characteristic olive-green of the mistletoe, contrasting with the dark brown of the apricot and with the white blossoms which were just opening on the twigs, made the specimen an object of much interest to all to whom we showed it.

The growth of the mistletoe is not a common thing in California, though we presume many have seen it. It is not, however, listed among the fruit tree pests of this State. In other lands it is quite otherwise. In Germany, for instance, in the common schools, where agricultural studies are required, we notice the subjects for December are as follows: "The enemies of fruit trees, as mistletoe mildew, moss rabbits and moles." There seems to be a doubt, however, in Europe as to how much of an enemy of fruit trees the mistletoe is, for Mrs. Orcutt of San Diego recently wrote to Meehan's Monthly that she remembers having read, sometime since, that the guibel or mistletoe grows on apple trees in England, and is propagated upon them purposely. Chamber's Encyclopædia says the mistletoe is a native of the greater part of Europe, growing on the apple, pear and hawthorn; also, on poplars, firs and other trees, but seldom on the oak. It is plentiful in some parts of the south of England, its evergreen leaves giving a peculiar appearance to the orchards in winter, when the bushes of the mistletoe are very conspicuous among the naked branches of the trees; but it is very local. It is a native of Scotland, though found naturalized in various places. The berries are full of a viscid juice, which serves to attach the seeds to branches, where they take root when they germinate, the radicle always turning towards the branch, whether on its upper or under side. The seeds are now believed to be deposited on the branches by the birds in the act of wiping their beaks after feeding on the mistletoe berries.

In some parts of California the mistletoe is very abundant, and our observation of it has been chiefly upon the oaks, but it also takes to other trees. Mrs. Orcutt, on Cayamaca mountain, observed a mistletoe upon the cedar trees and a different kind upon the oak and still another upon the pine, though the characteristics of the three were much as described in "Gray's Botany," which says "the American mistletoe grows from New Jersey to Illinois and southward, preferring elms and hickories." The mistletoe has

an interesting history and many attractive things might be said about it, but we presume they are known to most of our readers. The point of special interest is its occurrence in this State on fruit trees.

Four Japanese Government officials specially commissioned to select and purchase such fine stock as



The Mistletoe on an Apricot at St. Helena.



The Firm Rooting of the Mistletoe.

seems desirable arrived this week. It is their intention to look over California cattle a little before continuing their journey to the Eastern States and larger cattle centers. From America they will go to Europe and propose to spare no pains in getting the best breeding stock.

Of the promise of Asiatic markets for our wheat it may be noted that in China last year the value of flour imported (all from America) was 3,189,497 taels (\$2,266,138), as compared with 1,774,712 taels in 1898.

THE San Francisco and San Mateo Agricultural Association is making a most commendable effort to secure a notable live stock display at its fair, which will be held at the grounds in South San Francisco Sept. 24 to Oct. 6. Arrangements are proceeding to conduct the exhibit upon the latest approved lines as to accommodations for the comfort of stock and

visitors, the best facilities for judging and the best system of expert judging, so that the affair may be an object lesson of the greatest moment to all who are interested. It is proposed to make a complete representation of the live stock interests of California. The stock will be judged by experts from other States, who will point out the superior, as well as the inferior, points of animals in competition, thereby benefiting the breeders in obtaining scientific knowledge in the conduct of their business. It is the belief of the promoters of this enterprise that annual exhibitions properly managed have a very stimulating effect in the promotion of our live stock resources.

STATE QUARANTINE OFFICER ALEXANDER CRAW and his assistant—Mr. Isaacs—have been very busy during the last few weeks in distributing beneficial insects. We saw them the other day boxing up thousands of vedalias to send them

to people who had cottony cushion scale which they desired to check. These wonderfully successful destroyers of the fluted scale are grown by Mr. Craw in his breeding jars, and they are sent out with their appetite guaranteed to be up to concert pitch. Mr. Craw will also make a wide distribution of the comys fusca—the parasitic enemy of the brown apricot scale—and application should be made to him at once at the branch office of the State Board of Horticulture at the foot of Clay St., San Francisco. We have many times spoken of the successful work of this parasite in the Santa Clara valley, and wish to promote the trial of it wherever this scale is found.

RETURNS just issued by the London Board of Agriculture are dismal reading for the English farmer. From these it is learned that the ever-increasing importations of meat into the United Kingdom have reached the daily average of 2300 tons, while butter, eggs, rabbits and game have all enormously increased in the extent of their importation. The foreign products being almost invariably cheaper, the farmers are confronted with the prospect of eventually having no home market. For these conditions the Board of Agriculture suggests no remedy.

In the last dry seasons the citizens of Ontario purchased some of the moist lands, bored and took water. Suit was brought on the ground that this use by Ontario was an abstraction of Cucamonga's ancient supply and contended for the underground stream, but the court has found the water to be percolating water and any one could take it and use it where he pleased in any quantity, provided he owned the land from which it is taken.

A STRONG effort is being made to hasten the passage of a national quarantine law against imported fruits and plants. There is imminent danger of the orange maggot from Mexico and there should be the strongest possible barrier against it.

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E. J. WICKSON.....Horticultural Editor.

San Francisco, June 16, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—The Mistletoe on an Apricot at St. Helena; The Firm Rooting of the Mistletoe, 369.
EDITORIAL.—The Mistletoe on the Apricot, 369. The Week; The "Contrite Banker" Explains; Apricot Prices, 370. Miscellaneous, 369-370.
QUERIES AND REPLIES.—Silage in California; A 'Alf-an-'Alf Japanese Plum; Rusty Oats; Pear Blight; Too Vigorous Growth; Pear Scab; Flgs Dropping Leaves, 371.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending June 11, 1900, 371.
THE FIELD.—Hop Growing in California, 372.
THE DAIRY.—Rich Milk Best for Cheese, 373.
SHEEP AND WOOL.—Sheep Husbandry in the Pacific Northwest, 373.
THE VINEYARD.—Vineyard Grafting vs. Bench Grafting, 374.
FRUIT PRESERVATION.—Apricots Fresh and Cured, 374. Curing Prunes, 381.
AGRICULTURAL REVIEW.—375.
THE HOME CIRCLE.—Landing of the Pilgrim Fathers; An Old Maid's Marriage, 376. Congress of Women; Invalids' Food; To June; Five Cents' Worth of Travel; Blanching Almonds; Women to Have a Voice; The Charm of Pleasantness, 377.
DOMESTIC ECONOMY.—Domestic Hints; Hints to Housekeepers, 377.
THE MARKETS.—Produce Market; Fruit Markets, 378-379.
THE VETERINARIAN.—The Relation of the Cow to the Spread of Tuberculosis, 380.
PATRONS OF HUSBANDRY.—Co-operation; Eden and Temescal Granges; Healdsburg and Geyserville Granges; San Jose Grange; Oregon State Grange, 382.
FRUIT MARKETING.—Orange Selling at Redlands; Shortage of Orange Crop in Valencia, 383.
MISCELLANEOUS.—List of U. S. Patents for Pacific Coast Inventors, 383.

The Week.

Harvesting is proceeding in good shape and the chief trouble is still the lack of help. All regions are calling for hands and there is a straight issue between the grain growers and the early fruit growers as to which shall go short-handed. What will be done later, when the midseason fruit varieties ripen in full volume, remains to be seen. No doubt the available labor supplies of the State will be taxed to their utmost.

More is being done in local organization for fruit selling this year than ever before. The cannery combination naturally suggests to growers that, failing the old competition between buyers, they will have to bestir themselves to get what they are entitled to out of the present crop. It may not be of much use to fight the devil with fire, but back-firing is a pretty good agricultural operation, and the recourse to drying if the full equivalent is not offered by the canners is a very effective proceeding. There is something interesting on this practice, as applied to apricots, on another page.

There has been a warm time in wheat at the East during the week, and, though shippers here do not buy to any extent, it is still a fact that they could not get wheat now for prices which ruled a week ago. The crop condition which caused the rise at the East is outlined in our market review this week. Eleven hundred tons of wheat to South America is an interesting export item. It probably goes to millers for mixing with inferior local wheat, and we can furnish if wanted to elevate the flour all around the Pacific. Barley is weak and a large carry-over is talked about. New red oats are in. The oat market is quiet and steady, as the Government is still a large buyer. Rye is weak in the face of heavy offerings. The mustard crop will be very light this year. Hay is steady and unchanged for old; new hay is arriving in poor condition, but there is slack inquiry at present. Mill feeds are unchanged, except the downward movement in rolled barley. Meats are unchanged, except an advance in hogs. Butter is higher and fancy supplies decreasing. Cheese is firm with a good demand and a good prospect. Poultry has been in poor shape, owing to too much Eastern and poor local product. Beans are quiet. Potatoes are slow and unchanged, while onions are going down. Sales of new dried apricots are reported at 7½¢. The fresh fruit market is rather weak. Supplies are not excessive, but the demand is slack and there is too much poor arriving. Wool is still dragging. Most trade is in Oregon and Washington wools.

The "Contrite Banker" Explains.

TO THE EDITOR:—You were kind enough to send me a copy of your issue of May 19th, containing an editorial review of portions of my paper read before the bankers at their convention held in Sacramento. I read it with great interest. We are not often permitted to see ourselves as others see us, an experience which is most desirable. I was greatly surprised to realize myself as being on the mourners' bench—a "contrite banker." Really, I am not afflicted with contrition. My love for my calling is unbounded, and my admiration is almost without limit for many bankers with whom I am fortunate to be acquainted—conservative, broad-minded men, many of them leaders in social, religious and charitable movements. My paper was not intended as an attack, broadly speaking. The individual was not in mind; only the great financial power—machine, if you will—which gives movement to trade. It was designed as a criticism of some of the adjustments of the machine—adjustments honestly made and adopted after many years of experience. I have no thought—nor had I any—of apologizing for or condemning the builders of this machine. Therefore I am not contrite. My paper was quite general in its nature, a seeking after causes for certain irregularities of movement. Every banker in the convention was as anxious as I that the machine should run properly. I mean by that that the relations should be amicable between men on both sides of the counter. I do not doubt that in the process of adjustment of difficulties but that the banker will go more than half way. Every doctor has his remedies. Mine was offered, but under the label of poison. It was, perhaps, hoped to achieve more of an ethical than of a practical result, while considerable danger would follow its administration. There is an occasional black sheep found in our flock. I had something to say about it. Every flock, of whatever breed, is more or less tainted. It is the duty of the newspaper man, as well as of the banker, to corral his estrays.

I have taken the liberty to thus address you to quell any misconception of the banker which may have followed your editorial. It would be natural for an aggrieved man to feel more aggrieved if his argument for discontent against his banker appeared to be sustained by the asserted contrition of one of the distrusted class.

It seems that my paper has awakened considerable discussion. It gives me considerable pleasure to have another carry a portion of the burden, as evidenced by the appended note addressed to me:

I have been much interested in the paper which you read at the Bankers' Convention and also in the remarks upon it which appeared in the editorial columns of the PACIFIC RURAL PRESS. Many years ago, in this State, I began my life as a banker at the bottom of the ladder; the first maxim which I got was to this effect: "A wise banker will not lend to a man with the object of seizing and acquiring his debtor's property." Aside from the point of honor, it is vital that a banker should not own much land, because it is always slow in selling, but rather he should have mortgages on land with ample margins, for these can be sold rapidly when depositors wish their money. Anyhow, there are few bankers (probably not any) in this State of whom it can be truthfully said that they lend money in order to buy in the pledged realty under pressure of their own contriving. Yet our kind of business is open to any man who has moderate capital; there is no prior inquest as to skill or morals; and there are no class distinctions among us; for the State bank may become a national bank, or the reverse.

You might tell the editor that he has laid the lash unjustly on us bankers in those paragraphs wherein he joins the borrowers in blaming the lenders if crops fail and things grow wrong. Does the banker know more than any other man? Does he lend with the expectation that the losses shall fall upon the bank and the profits, when found, shall only go to the borrower? To put the matter in common terms, is it mainly when the looser in a square gambling game commences to "squeal"? You and I know many bankers and we know that they have cancelled principal and interest in large sums to hopeful borrowers in order to avoid foreclosures; but these facts cannot be put into print by items.

I will vouch for the writer, whom I have known for many years and who has had a large experience.

Bank of Yolo, Woodland.

C. W. BUSH.

We are quite in sympathy with the spirit of Mr. Bush's communication, and we think our own comments were along the same broad lines. Neither Mr. Bush nor we have thought or written along personal lines. The whole discussion has been concerning general policy, and we believe the influence of the whole matter will be for the good of all. Placing Mr. Bush in the role of "a contrite banker" was merely exercising a newspaper man's right to introduce a word picture to make comment more striking and attractive. Mr. Bush has also a right to protest that contrition is not his personal state of mind, and we accept his demurrer as to his own faith and practice. Still, we believe that if some bankers are not contrite they ought to be; and, if it will testify to our honesty and frankness, we are quite willing to

admit that some borrowers ought to be contrite also. The whole motive in the discussion on our part is to call attention to the subject of agricultural credits in the hope that thought upon it, both by lenders and borrowers, may lead to more rational views and policies.

With reference to the note from another banker, which Mr. Bush properly embodies in his communication, we are glad to have the additional assurance that making loans to get possession of the security is very rare. We held that view and said that such a banker is a shark, and we did not waste a line upon him, remarking only that every community could take care of its share in that class of bankers if it has any.

Our contention was and is, not that the banker is to blame if crops fail, nor that bankers alone should lose and farmers gain; nor do we think it manly for the loser to squeal. But the banker who writes in support of Mr. Bush comes out strongly, also, in support of our view of the case. We believe that much of the trouble has arisen from the banker looking upon an agricultural loan as a gambling game. That view is one of those against which we vigorously protested. Bankers have done too much gambling in this line, and have by mistaken confidence, arising from ignorance and lack of insight, encouraged others to go into agriculture on a gambling basis, and have thus contributed to their ruin.

We complain that bankers who loan on agricultural security do not know enough about agriculture. They have been filled to the chin with fairy tales which they have regarded as promising lines for development. They have encouraged borrowers to extravagance by their misplaced and misdirected lavishness in loans for booming of all kinds. It is natural that this should be so, if the lender and borrower both think they are gambling. What we want is the arrest of all that kind of development and the building up of legitimate farm improvement along safe lines, with such moderate assistance of capital as can be used in gradual extension and diversification which it is within the capacity of the borrower to accomplish. We hold that the local banker should be able to judge shrewdly these points and bring his business upon such a basis of conservatism and safety that he can accept low interest, because he will have no boom losses to cover at the expense of the successful borrower.

But we do not care at present to continue our own comments along these lines. Let others speak their minds and give the teachings of their experience. We are content with having made prominent issues which we conceive to be of the highest economic importance and that our readers will earnestly think about them.

Apricot Prices.

On another page of this issue there is an important report prepared by a committee of the Alameda county apricot growers as to the equivalence between dried and fresh apricots from their point of view. The figures will be interesting everywhere. We notice that, according to the Express, about 1200 tons of apricots were sold to the canneries this week at \$20 per ton, f. o. b. at Winters. This is considered a fair price, as it is better than 6 cents for dried fruit, and is a big saving of labor and time. Some growers, however, think that prices will be good this season, and are expecting 9 or 10 cents. Offers are already made of 7 or better. At Fresno, canners and packers offer only \$20 per ton for Royal apricots, but some of the growers have been offered as high as \$25. Very little green fruit is being sold at these prices, most of the growers preferring to dry their apricots, as contracts are being made at 6@6½ cents. At Hanford, buyers for the combine are trying to buy apricots for \$20 per ton, but are getting very little fruit, as the growers are getting 7½ cents for their apricots dried, and this is better than \$20 per ton green; besides, when they sell to the cannery the fruit was to be picked from the trees and assorted.

We are told that buyers are ready for Hatch varieties of almonds at 9@9½¢ per pound. It remains to be seen what the growers think of that figure. The crop of this year is estimated by the J. K. Armsby Company of San Francisco and Chicago at 300 carloads, as against 225 carloads last season. The estimate is given in carloads as follows: Chico and

North, 25; Hune's control, 50; Yuba district, 20; Woodland, 10; Davisville, 15; Dixon, 5; Capay, 5; Winters and Vacaville, 5; Suisun, 25; Antelope and Grangeville, 10; Lodi, 15; Stockton, 5; San Joaquin valley, 10; Brentwood and vicinity, 30; Contra Costa county, 10; Alameda county, 15; Santa Clara county, 20; southern California, 10; scattering, 15. Readers in each locality can measure the above figures by their own estimates in any of the localities named, and thus judge of its general accuracy, perhaps.

MR. LE ROY ANDERSON of Cornell University has been appointed dairy instructor at the State University and is expected to begin his work here in August. He has been connected with the dairy school at Cornell as instructor and a promoter of dairying along modern lines in New York State. He will receive a warm welcome from California dairymen, as ampler provision for dairy instruction at the University has long been sought by them.

QUERIES AND REPLIES.

Silage in California.

TO THE EDITOR:—I have just completed a 150-ton stone silo and within two weeks expect to try my first ensilage. Having never seen a pound of silage in my life and having no practical knowledge of feeding it, am I taking any possible chances? A successful "old line" feeder tells me I will kill my cows, and as I am the pioneer silo man in this part of the country, don't wish to make a failure. I shall fill the silo now with alfalfa and feed with it mixed barley, oat and alfalfa hay—the first two comprising about 80% of the whole.

Does the book by W. A. Henry advertised in the PACIFIC RURAL PRESS cover this subject from a California standpoint?—F. B. MARKS, Dos Palos.

You are in no danger of killing your cows if you have a good tight silo and pack your green stuff into it so that only the slight fermentation characteristic of good silage can take place. If your silo is not airtight or if the material is not properly packed in you are likely to get rotten silage and there is an element of danger in that. But there is no difficulty in telling good silage from bad. Your smell will tell you that, even if you have never seen silage before. Good silage has a very acceptable odor: you will be tempted to try the taste of it because it smells so good. Bad silage gives its own warning. Your "old line feeder" must bring himself up to date on this silage question or he will get laughed at pretty soon. Perhaps he is still thinking of some horses which were killed near Hollister about twenty years ago. That was a case of rotten silage: the silo was nothing but an old shed and the conditions of compression and exclusion of air were impossible. Probably also the horses were very hungry and ate too much of the bad stuff. Horses cannot handle silage as well as cows and must not be given too much even of good silage.

Prof. Henry's book discusses silage from general points of view and these are true in California as elsewhere. The files of the PACIFIC RURAL PRESS are the best source of information on California experience in the use of silo. Prof. Henry's book covers the whole subject of animal feeding and every stock man should have it.

A 'Alf-an-'Alf Japanese Plum.

TO THE EDITOR:—I send a curiosity in the shape of a half-grown Japanese plum, which is naturally green on one side, but white on the other. How can you account for such a freak?—READER.

It is indeed a peculiar affair; the two parts are distinctly divided from the outside all through the flesh of the young fruit. Such freaks are now and then seen with different fruits, and all sorts of reasons have been advanced to account for them. They are probably due to the same causes which produce variegated leaves. Recently, Mr. A. F. Woods of the United States Department of Agriculture has demonstrated that the absence of the natural green color in certain parts of plants is due to the destruction of the chlorophyll by oxidizing enzymes. These are chemical ferments which attack the coloring bodies in the plant cells. How these enzymes gain access only to certain parts of the tissue and bleach them while other parts remain normal in color is yet to be determined. It seems reasonable in the case of so symmetrically divided a fruit as your sample that there must have been entrance along the bundles of

fibers leading to that part of the drupe, and not to other parts, because it is known that certain bundles pass from the twig to one side of the fruit and other bundles to another side. But why and how this division is determined in the distribution of the enzymes is too deep for us.

Rusty Oats.

TO THE EDITOR:—Enclosed find sample of oats with "rust" on it. We should like to know, or know how to learn, the nature of rust and what is recommended for farmers to do to prevent or lessen it.—READER, Ferndale.

The rust which affects oats and other grains is a fungus, a parasitic plant which makes its way into the tissues of the growing grain and destroys it by perverting the sap to its own uses. Fungi of the same class as the grain rust are controlled by the use of a spray, composed of bluestone and lime, when they affect fruit trees or ornamental plants; but there does not seem to be any opportunity to make fungicidal applications to field crops, because the cost involved is greater than the value of the crop itself. The way to escape rust in oats is to select varieties which are least subject to it, and our seedsmen can furnish you with what are called "rust-proof" varieties. Usually the red or black oats, particularly the red, are less subject to rust than the white varieties. By inquiry in your own county, you will find that some growers have learned to select their seed with reference to escaping this fungus.

Pear Blight.

TO THE EDITOR:—Do you have pear blight in California? If so, do you keep it under control by the use of the knife? Do you find it beneficial to sterilize the knife after each cut? We have hundreds of orchards in this country that are attacked with blight and the owners have just thrown up their hands and won't cut it out. The disease as it occurs here is in a very mild form. I know of an orchard that has been affected for six years and is still bearing, and has never been pruned for the blight, and while the disease exists as an epidemic there is scarcely a tree that has lost 20% of its wood. I attribute this to our hot, dry summer.—READER, Alvin, Texas.

We have comparatively little bacterial pear blight in this State, but in some localities it is doing considerable injury. The treatment consists in cutting back to a point below the affected parts, and in this way the disease is measurably checked, though in many instances the trouble reappears below and some trees are lost. Still, the cutting back unquestionably prolongs the bearing and profitable life of the tree. We doubt if many practice sterilizing the cutting tools, though they understand the advantage of this additional precaution. Certainly California growers would not allow a blight to proceed without the effort to cut it out, and Texans must acquire the California spirit in proceeding against the disease if they expect to maintain their fruit product.

Too Vigorous Growth.

TO THE EDITOR:—My melon vines run rampant, bloom freely, but cast their bloom; no fruit set. What is the cause and the remedy, if any? They did the same last year.—W. L., Armona.

Your vines are having too good a time. They are having too much moisture, and if you are irrigating them give them less water. If they are on naturally moist land you can check the growth and promote fruiting by root-pruning—cutting down around the plant with a sharp spade a foot or so away from the main stem. If this is not done they will probably stop their rampant growth and set fruit later in the season, as the moisture naturally decreases with the advance of the dry season. Tomatoes sometimes act in the same way and can be cured by the same treatment.

Pear Scab.

TO THE EDITOR:—I send a sample of Bartlett pears that have spots upon them. What is the cause, and also the remedy, if there is any known? I send also a few leaves gathered from the trees that are diseased, too.—GROWER, Shasta county.

Your sample of pears and pear leaves shows that you have what is called the "scab" fungus. It attacks the leaves, the fruit and the young wood, and does very serious injury, as the fruit affected as your sample is would be unsaleable. It is probably too late to do anything this year to save the fruit. The treatment must be made in advance of the spotting. The ordinary treatment consists in a thorough winter

spraying with lime, salt and sulphur wash, followed by Bordeaux mixture as the foliage begins to grow. In this way the fungus is checked so that the fruit does not become spotted.

Figs Dropping Leaves.

TO THE EDITOR:—What is the matter with my fig trees? The leaves are all getting yellow and falling off. They are large, thrifty trees, and are all white figs variety; the soil is dark and heavy. I have others on heavier soil that are all right.—A. M. I., Palermo.

We can only guess at a case in which so little information is given, and our guess would be that the trees need a drink.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 11, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

COAST AND BAY SECTION.

The weather has been favorable for grain and fruit during the week, and all crops are maturing rapidly. There was quite a severe thunderstorm in the vicinity of Arroyo Grande on the 9th, accompanied by light rain, but no damage has been reported. Haying is nearly completed in some sections, and baling is progressing; the yield is comparatively light, but the hay is of excellent quality. Grain harvest is in progress in some of the southern coast counties; the yield is said to be better than estimated, and in some sections will be about average. Corn and potatoes are doing well. Deciduous fruits and grapes are making satisfactory progress.

SACRAMENTO VALLEY.

Conditions have been favorable for all crops during the week. High temperatures prevailed on the 5th and 6th, and fruit was but damaged. Dry northerly winds are causing a scarcity of green feed in some places, but there is an abundance of dry feed. Haying and baling are progressing, and the crop is nearly all gathered in some localities. Grain harvest will begin soon. Although most of the reports received at this office indicate that there will be a large yield of wheat, there are some statements to the contrary. Deciduous fruits are maturing rapidly. Apricots are being shipped and dried. Early peaches are ripening.

SAN JOAQUIN VALLEY.

The first part of the week was warm and sultry, hastening the ripening of grain and fruits. The latter portion was generally cloudy and cooler. Harvesting of grain has commenced in most sections, but the work of the headers has been retarded on account of the dew in the early mornings. In some sections the quality of the early sown grain is not as good as was anticipated, but the yield is good. Fruits of all kinds are progressing nicely. Apricots, cherries, early peaches, early plums, pears, blackberries and currants, all of good quality, are being shipped to market. Grapes are setting well, but in some places the crop will be below the average. The snow in the mountains has been melting quite rapidly, furnishing abundance of water for irrigation, and orchards and alfalfa are being flooded.

SOUTHERN CALIFORNIA.

Warmer weather has been beneficial to all crops. Light sprinkles of rain have fallen along the coast and there has been considerable fog in some sections. Haying and baling continue. The yield is light, though better than last season's. Very little grain will be harvested. Early corn is nearly ready for market. Beans on irrigated lands are up and looking well. Early apricots and grapes are ripening. Peaches are still backward. Prune trees are in full bloom. Grapes and citrus fruits are in good condition. The walnut crop will probably be nearly average. Irrigating water is plentiful.

EUREKA SUMMARY.—Oats in places on highlands are considerably damaged by rust. Fruit is generally doing well, especially apples, which are developing most favorably. Vegetables continue making good growth. Haying is progressing.

LOS ANGELES SUMMARY.—Grain harvest has commenced in places where there is a crop. Corn and beans are growing finely. Haying continues and baling is in progress. Prune trees are in bloom in places. In some localities the peach and prune crop will be a failure.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday June 13, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall to Same Date.....	Average Seasonal Rainfall to Date.....	Minimum Temperature for the Week.....	Maximum Temperature for the Week.....
Eureka.....	.00	50.02	35.30	43.97	48	60
Red Bluff.....	.00	22.87	21.55	26.38	62	104
San Francisco.....	T	20.28	15.00	20.33	52	100
San Francisco.....	.00	18.42	9.38	22.39	50	64
Fresno.....	T	10.14	7.78	8.80	58	104
Independence.....	.04	3.70	1.58	4.62	54	88
San Luis Obispo.....	.00	17.30	17.33	16.79	48	80
Los Angeles.....	T	7.88	5.58	17.22	58	88
San Diego.....	.04	6.02	5.24	9.41	58	88
Yuma.....	.00	1.29	1.34	2.89	66	98

THE FIELD.

Hop Growing in California.

By DANIEL FLINT of Sacramento in Farmer's Bulletin No. 115 of the U. S. Department of Agriculture.

The hop can be grown in nearly all parts of the world, but not at a profit. It thrives best on a deep, rich, moist soil such as that found in the bottom lands along large streams, especially those which have overflowed and deposited sediment for hundreds of years.

In the United States, New York is the leading hop producing State, followed by the Pacific coast States, Oregon, California, and Washington, in the order given. Small amounts are raised in Wisconsin and a few other States. Within the past eight years the production of New York has gradually fallen from about half the total for the country to about one-third.

The advantages of California in the production of the best and purest hops are acknowledged by all who have investigated the subject. The industry is confined to a few counties in the north central portion of the State, the principal hop growing district lying near Sacramento.

Sacramento County.—The largest yield per acre, 2500 to 4000 pounds, is grown on the American river in the northern part of Sacramento county. The land here is composed of a rich sediment from 1 to 4 feet deep, washed down, overflowed, and deposited as a result of surface mining from 1849 to 1855. This sediment is composed largely of decayed vegetable matter that had been collecting in the mountains for unknown ages. On the Sacramento river, in the western part of the county, a better quality of hops is grown, the yield being from 1500 to 3000 pounds per acre. The bottoms of the Consummes river, in the southern part of the county, are coming to the front very fast with fine yellow quality and generous yield of hops. They are silky, smooth, even yellow hops, the kind much sought after by buyers.

Yuba County.—On the Bear river, in this county, large quantities of hops are grown, and they are of fair quality. The land here also is composed of sediment from the washings of mining. The yield is from 1500 to 2000 pounds per acre. This county lies north of Sacramento.

San Joaquin County.—Along the Mokelumne river, in the northern part of the county, there is rich sediment land, and good crops are grown. Farther south, on the San Joaquin river, very few hops are grown, grazing and production of hay and cereals being the leading industries.

Yolo County.—In this county, which borders the west bank of the Sacramento river, the hop industry has developed considerably, but without any very striking features.

The second hop growing district lies in the same latitude, but nearer the coast, and embraces parts of Sonoma, Mendocino, and Alameda counties.

Sonoma County.—At Santa Rosa, in the eastern part of the county, are grown the finest colored hops produced in the State, but they are not supposed to possess any superior merit for brewing purposes. Hops are also grown along the Russian river, in the northern part of this county.

Mendocino County.—Farther up the Russian river, in this county, good hops are raised, the yield ranging from 1200 to 2000 pounds per acre.

Alameda County.—This county lies east of and borders on the Bay of San Francisco. Hops are grown in the central part of the county, the largest hop plantation in the State being at Pleasanton.

CLIMATIC CONDITIONS.—In California climatic conditions are very favorable to hop culture. From the 1st of May till the 1st of October there is little rain. In some regions heavy rains in the summer and early fall cause a disastrous development of mildew and lice, which can be kept in check only by spraying, an expensive and troublesome operation. Among the advantages enjoyed by California, so far, is an entire freedom from such pests.

In selecting a locality for starting in hop culture, it is best to choose one where irrigation is unnecessary, except in excessively dry years. It is expensive to irrigate; and, unless the irrigated ground is worked, in a few days it will become hard and crack open, and the results will be bad. Ground, to be successfully irrigated, should be made as level as possible before planting out the roots. If the ground is quite sloping a system of checks can be used. Water should not be allowed to stand long, as the hop can not stand a wet subsoil.

BEGINNING OF THE INDUSTRY IN CALIFORNIA.—Hop growing in California began in 1855 in Alameda county. Prior to this the only hops used on the Pacific coast were brought "around the Horn." It was thought necessary to inclose them in sealed tin cans in order to preserve their strength. This made them very expensive. At that time they were used mostly for yeast and medical purposes, the great development of the brewing business having hardly begun. The first hops grown in California were cured on blankets and sheets spread on frames, and pressed into cotton sacks, holding about 100 pounds each. The first two sacks were sold to brewers of Sacra-

mento. The brewers were accustomed to using the hops which came around the Horn, whose age was unknown and whose color and strength were nearly gone. When they first tried fresh, strong California hops they used the same quantity, with the result that the beer was too bitter for use. Consequently they began to reduce the quantity used for a brew and to mix them with the old imported hops.

METHODS OF CULTURE.—A farmer who wishes to make a success of hop culture should select the best and moistest soil he has, without a wet subsoil. This kind of soil will prove the most productive and easiest to cultivate. Sandy loams are preferred by experienced hop growers. Clay, adobe and alkali land should be avoided.

Preparing the Ground.—In plowing for a hopyard, do not use too large a plow, as a medium-sized one will do better. Plow both ways and make the land mellow by harrowing after both plowings. It is well to use a subsoil plow and loosen the soil as deep as possible, but the subsoil should not be turned up to the surface. The hop plant is a great feeder, its roots reaching far downward and outward.

The Rows.—In the United States the customary width apart of rows is 7 to 8 feet, the former being the usual width on the Pacific coast. If they are closer the hops will bunch up, the sun can not get at them, and they will look immature and faded out for want of sunshine.

A sled is used in marking out the rows. The yard should be cross-marked at right angles. Straight rows are very desirable and a sign of good farming. To secure them, run the first row by stakes marked with white paper; then let one runner of the sled return each time in the last row made; or, if that is not fast enough, an outrigger can be placed on the sled to follow in the last row marked. If the yard is fenced, plenty of room should be left to turn the team in cultivating.

The Roots or Sets.—The hop plant sends out near the surface of the ground runners or layers extending several feet without diminishing in size. These have numerous eyes or buds. These runners are removed and cut into pieces 6 to 8 inches long, containing two or more eyes, and these are known in hop culture as "roots."

In putting out a new yard the best possible roots should be secured. Many growers think it better to secure roots from another district. This is a common practice in the best hop growing districts in Bohemia.

Pruning.—This operation can be performed in the fall after the first rain, but on this coast it is usually done in January or February. Most growers turn the soil away from the hills by running a plow on each side of the row and as close as may be without injuring the plants. Some large growers use a disc plow with four or five horses, running close up to the hills on both sides of the row. Then, with the hoe blade of a mattock or a large potato hook, the soil is entirely removed from around the plants, exposing their condition. A sharp steel knife is used to cut away all surplus roots or runners. Also 1 or 2 inches of the crown may be cut off where the eyes are not properly developed. Four to eight buds are enough to leave for the development of vines. If any plants are found to be rotten or unhealthy, they should be removed and new sets should be put in their places. After pruning, take a hoe and draw up the nice mellow soil so as to cover the hills about 2 inches deep, forming a slight mound.

Planting.—In California planting is usually done in January and February. With a dibble, put two or three roots in a hill where the markings cross, leaving their tops level with the surface of the ground, 6 to 8 inches apart. In every tenth hill of every tenth row put male or staminate plants so that they will occupy every one-hundredth hill. With a hoe draw up the mellow earth so as to cover the tops of the roots 2 or 3 inches deep, making a small hill. On very moist ground a lighter covering will answer. In fact, some growers leave the hills quite bare.

Replanting.—As already stated, the hop plant is perennial, the root sending up a new crop of vines every spring for an indefinite period. But after a number of years the crowns become too large and woody, the vines start later in the spring and grow less vigorously, and there is a decline in the yield of hops. Hence it is considered best to renew the roots every ten or twelve years. In doing this, the ground should be thoroughly torn up with a large plow and a strong team, and prepared as for a new field. It is better to plant the new hills halfway between the places where the old hills stood.

If single hills in a yard become weak or unhealthy, they should be dug out and new roots put in their places.

In California a crop is harvested the first year often amounting to 1500 pounds or more per acre, and the plants are at their best the second year.

Cultivation.—The object of cultivation is to keep the ground mellow and retentive of moisture, and to keep down weeds. As the hop has a mass of fibrous roots reaching out in every direction near the surface, it is bad policy to cultivate very deeply during the growing season. In ordinary seasons, in the vicinity of Sacramento, cultivation can go on until the 1st to the 10th of July. The plow and harrow are indispensable tools for nearly all purposes in hop culture. Never plow without following soon after with the

harrow, unless you have wet land and wish to dry it out. The cultivator and disk plow are useful instruments in a hopyard. The plants should not be hilled up much, but the ground should be kept nearly level. In cultivating, steady horses should be used, and the men should be careful; the whiffletrees used should be short, and there should be no projecting buckles or straps to catch the vines. Until the hops are well armed out, a pair of medium-sized horses may be used to plow out the centers, while the cultivation nearer the row may be done with one horse.

SYSTEMS OF TRAINING.—In California hop poles have been almost dispensed with on account of their scarcity and short life and the labor and expense of handling them. The substitution of the wire trellis for the old-fashioned pole system has reduced the cost of hop production more than any other improvement. In Washington and Oregon, where poles are easily secured at small expense, they are still used to some extent.

In California two forms of wire trellis are used—the high and low—the former being the most modern and the most generally employed.

The High Wire Trellis.—This system may be briefly described as follows: Rows of poles are set at considerable distances apart across the yard each way at right angles; wires are stretched and fastened to the tops of the poles; strings are tied to these wires and drop down to the ground, serving as supports for the vines.

The posts are of redwood or cedar, 4 to 6 inches in diameter, and 20 feet long. The outside rows of posts should be 6x6 inches. Posts 4x6 or 4x4 are sometimes used for inside supports. These are set from 2 to 3 feet in the ground. The outside posts should slant outward at an angle of 30° from the perpendicular. Opposite each of these, at a distance of about 20 feet, an anchor 6x6 inches in size and 4 feet long should be buried 4 feet in the ground.

All posts, except the outside row on each end of the yard, are set 35 or 42 feet apart—that is, a row of poles in every fifth or sixth row of hops. For the principal or supporting wires No. 4 black cable wire is used. These are stretched across the field the shortest way and fastened on the top of each post in the row with a staple. Each wire should be drawn taut and fastened to the anchor at each end. For the transverse or trellis wires No. 6 black wire may be used. These wires should be passed over the supporting wires at right angles and fastened where they cross with pieces of small wire or twine. These wires should be strung only 7 feet apart, or one for each row of hops. At the ends it is customary to set a post, sloping outward and anchored as already described, at the end of every other row. The alternate wires can either be run down to the ground and anchored without the support of posts, or they can be "forked" and fastened to the post on each side, thus leaving space for teams and wagons to pass.

Fields should not be made too large, and great care should be exercised to see that no weak spot is left in the trellis, for if one post breaks, the whole field is liable to go down. A close watch should be kept and, in case of a heavy crop, some of the outside posts should be propped.

Low Trellis.—A common form of low trellis is made by setting up at each hill a stake 7 to 9 feet long with wires or strings crossing post to post at right angles over the tops of the stakes, to serve as supports for the vines after they reach the tops of the stakes.

When the low trellises now in use in California give out there will be a few if any more of the kind put up, for several reasons: (1) The hops bunch up and grow too much in the shade; the sun does not have a good chance at them, and perhaps one-third of the crop will be immature and look bleached out. (2) The hops can be cultivated for a short time only, on account of the drooping arms. Teams can not pass between the rows to scatter manure or haul off the vines and hops. (3) The Chinese and Japanese who usually take contracts to grow hops charge more per acre for low trellis than for high. Pickers also charge more for gathering the hops. (4) When the vine is once placed on the string of the high trellis little more trouble is experienced, unless a strong wind occurs; but in case of the low trellis, as soon as the vines reach the tops of the stakes they refuse to go on the horizontal supports and have to be put around the strings or wires by hand, and this operation has to be repeated every few days till the growing season closes.

TYING UP THE VINES.—The operation of tying up the vines is usually performed between the 1st and the 20th of May. Cotton cord is used in making supports for the vines. A piece 8-ply cord 15 feet long is spliced to a piece of 20-ply, 4 feet long, the latter forming the upper end, which is tied to the wire. While the vine is climbing up, the smaller cord is sufficient to bear its weight, and when it reaches the stronger cord near the top there is little danger of its breaking. Manila and Japanese twine have been used, but have proven failures. Should strong winds from one quarter prevail for two or three days and the vine be blown away from the string it may possibly need to be replaced; however, it will generally resume its position without assistance when the wind dies away.

The hop vine twines from left to right around its

support, and this movement produces a twist in the stem from right to left. The vine is six-sided and has little sharp hooks on each of its six corners, with which it holds on to its support. In the latter part of the cultivating season the men frequently wear masks of wire to keep the vines from scratching their faces.

In tying up the vines four of the most thrifty and longest-jointed vines in each hill are selected, and the rest are destroyed by pulling up or cutting off. If all the vines in the hill seem inferior, all may be cut off, and in a short time better ones will appear. Sometimes, however, a vine which appears small in the start will, when it reaches a length of 4 or 5 feet, thicken and become a fine, vigorous vine. There are differing opinions as to the number of vines which should be preserved and trained up for bearing hops. The following sums up the results of the writer's experience: The average for all purposes and all soils should be: Hills, 7 feet apart each way, two strings to each hill, and two vines around each string.

To put up these strings, a platform with a railing around the top is mounted on a wagon. On this the men stand, the elevation being such that their heads just clear the wires. The strings are made ready in advance. The wagon is driven parallel with the transverse or trellis wires. One man to drive and six on the platform, the strings can be put on three wires at once about as fast as the team can walk. Three men follow, tying the lower ends of the strings to pegs driven in the ground at the hills. New strings must be procured every year, as it would cost more than the string is worth to disentangle it from the twisted vine.

When the vine is about 2 feet long it is wound around the string two or three times, after which it will take care of itself if not disturbed.

THE DAIRY.

Rich Milk Best for Cheese.

To THE EDITOR:—At the farmers' institute recently held at Courtland, in this county, in the course of some remarks which I made, I was asked if it was not true that Holstein milk was better for cheese than Jersey milk; in other words, if, pound for pound, it did not contain a higher percentage of casein and other insoluble cheese-making solids. I replied that I thought not, that extended and convincing experiments conducted by scientific authority had demonstrated that milk was valuable for cheese making in proportion to its richness in butter fat; that the more fat it contained, the more and better cheese it would make. This was disputed, and I referred to one of the University professors who was conducting the institute for substantiation of my statement. To my surprise, he replied that he believed it to be a fact that Holstein milk which was poor in fat was richer in casein than the richer milk. Believing him to have been mistaken, I referred the question to Mr. Hunter Nicholson, the eminent dairy authority of the Jersey Bulletin. His reply is so interesting that I present it quite fully. After stating that investigation has settled this question beyond any reasonable doubt, he continues:

The investigations have arisen in course of an attempt to find a trustworthy basis for the value of milk sold to cheese factories. The question has not been confined to Holstein and Jersey milk, but has embraced milk from all kinds of cows. Without attempting to even summarize the enormous mass of statistics worked out by some half dozen or more of experiment stations, the conclusions reached may be briefly but fairly stated:

- 1. "Normal milk, whether rich or poor, has, on the average, one-fourth as much casein as total solids, though single samples may depart widely from this standard."—Vermont Station Report, 1893, p. 100.
- 2. From poor to rich there is a relative increase of the fat and casein, though the casein does not increase as fast as the fat. This table shows how this is:

Total solids.	Fat.	Casein.
11.00.....	3.07.....	2.92
12.00.....	3.50.....	3.07
13.00.....	3.99.....	3.30
14.00.....	4.68.....	3.57
15.00.....	5.38.....	4.00
16.00.....	6.00.....	4.30

The total solids of Jersey milk run from 13% to 16%, the solids of Holstein milk from 11% to 13%. The casein of Jersey milk from 3.3% to 4.3%, the casein of Holstein milk from 2.92% to 3.3%. Hence 100 lbs. of Jersey milk should contain from 3.3 to 4.3 lbs. of casein; 100 lbs. of Holstein milk from 2.92 to 3.3 lbs. of casein.

3. The yield of cheese from 100 lbs. of milk is very nearly proportioned to the per cent of fat in the milk. In normal factory milk each pound of fat yields an average of 2.72 lbs. of green cheese. "The proportion of fat lost in cheese making is quite independent of the amount of fat in the milk. Usually the proportion lost is slightly less from rich milk than from poor milk."—Eleventh Annual Report, Wisconsin Experiment Station, p. 142.

4. The solids of milk are either soluble (sugar, albumen and a portion of ash) or insoluble (fat, casein and phosphates of lime and magnesia). The insoluble solids are the cheese-making constituents. The process of cheese making consists essentially in separating these insoluble solids from the milk. Casein possesses a peculiar

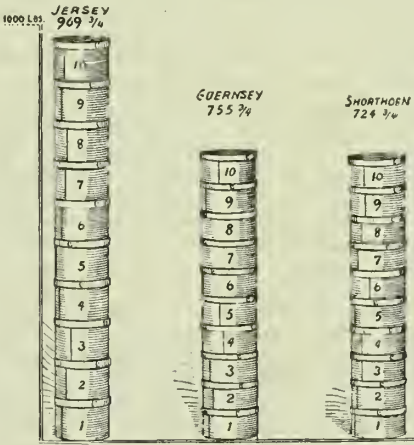
property of forming into a jelly-like mass (curd) when rennett is added to it. At first the curd extends throughout the milk, but gradually contracts to about one-tenth its original volume. In contracting, the curd squeezes out the soluble parts, which run off in whey, and retains the insoluble parts, viz., fat and phosphates. Only about 4% or 5% of the whey remains incorporated with the cheese. Hence the cheese-producing capacity of milk depends on the amount of insoluble solids—fat, casein and phosphates—which it contains.

Finally, 5% milk is better for butter and better for cheese than 3% milk; the skim milk from 5% milk contains more solids not fat than skim milk from 3% milk, and is therefore more valuable as a food.

Prior to 1890 it was generally believed that the value of milk for cheese making depended more on its casein than on its fat. This position was maintained at that time by no less an authority than Hoard's Dairyman and resulted in an act of the Wisconsin Legislature permitting cheese from milk skimmed down to 3% fat to be labeled "standard." This law resulted most disastrously and Wisconsin has not yet recovered from the consequence of her mistake. Shortly after this, Dr. Van Slyke, at the New York Experiment Station at Geneva, began his famous investigations. According to these experiments, Jersey, Ayrshire and Holstein milk showed as follows:

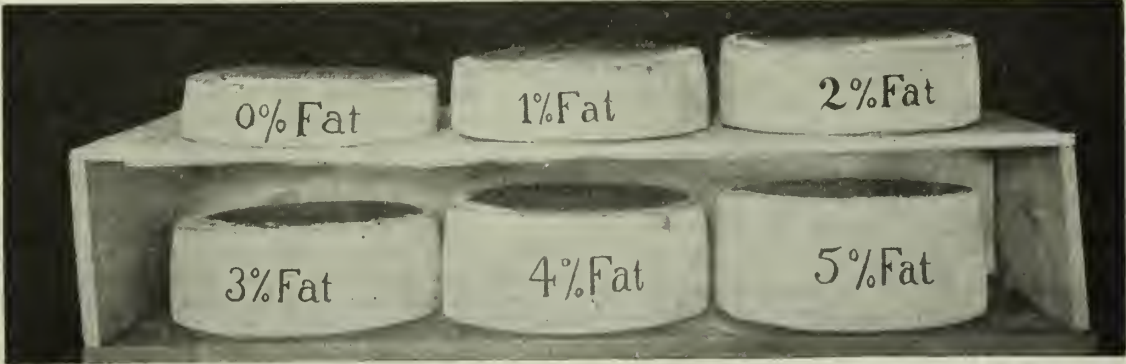
Breed.	Fat, Per cent.	Cheese to 100 lbs. milk.
Jersey.....	5.39	14.01
Ayrshire.....	3.90	10.47
Holstein.....	3.60	9.70

The cheese tests at the World's Fair at Chicago followed shortly after and confirmed Dr. Van Slyke's figures most accurately. The following cut illustrates most clearly the relative amount of cheese made by the competing breeds during their famous cheese test.



During this test the Jerseys made one pound of cheese for every 13.82 lbs. of milk, with the Guernseys one pound of cheese to 14.47 lbs. milk, and the Shorthorns one pound to 16.82 lbs. of milk.

A more striking illustration of the fact that milk is valuable for cheese in proportion to its fat is supplied by the following cut, reproduced from a photograph of a series of cheeses made at the Wisconsin Experiment Station.



Two hundred pounds of milk only were used in making each cheese and the difference in size is due entirely to the difference in percentage of butter fat contained in the milk from which they were made. In addition to the increased quantity of cheese made from a given amount of rich milk over that made from the same amount of poor milk, the quality of the cheese made from the richer milk is vastly superior.

I trust you will forgive the length of this article and understand the spirit in which it is written. It is not with the desire to elevate or criticize any breed, but only in the interest of truth. If rich milk makes more cheese, better cheese and at a lower cost and greater profit, our dairymen and breeders should know it. I leave to them to seek that richness among such animals and in such breed as they see fit or the truth dictates.

I trust that the professors in charge of our institute work may investigate this question thoroughly and present it to our farmers as it has been determined by the latest scientific research. P. J. S. Sacramento,

SHEEP AND WOOL.

Sheep Husbandry in the Pacific Northwest.

No doubt many California readers who have available grazing lands will be interested to have the facts about the sheep and wool interests of our northern sister States, where the industry has recently shown considerably advancement. Dr. James Withcombe, assistant director of the Oregon Experiment Station and a first-class live stock expert, has written for the U. S. Department of Agriculture an article on this subject, from which we take leading paragraphs:

POPULAR BREEDS.—The most important item connected with an embarkation in sheep husbandry is proper selection, guided by the basic principle of harmony between breed and environment. It would be folly indeed to take the ponderous long wools to arid or semiarid regions, and expect them to develop large typical bodies and grow long, lustrous wool from the natural herbage furnished by these lands. In the absence of suitable natural conditions, artificial means, such, for instance, as irrigation, may be employed in the development of succulent plants. The selection of this breed, however, for this character of soil is of doubtful expediency, and much better results could be confidently looked for with breeds that are better suited to such conditions.

In the pastoral regions of the Pacific Northwest conditions are not radically dissimilar to those found on the mountains of Spain and some of the hill lands of Great Britain; hence, breeds of sheep that have thriven there may safely be relied upon when introduced into this region. The Merino, as an intensely cosmopolitan sheep, stands without a peer. He thrives on the rich alluvial bottom lands, presenting a rotundity of form that would do credit to some of the smaller mutton breeds, and yields annually a heavy fleece of admirable wool. We find the same hardy, contented breed, in flocks of 2000, grazing upon the plains and mountain heights, industriously nipping the tender herbage, without a sign of constitutional defect in the whole flock. It is these peculiar traits of character that so eminently fit the Merino for transient sheep husbandry. The breed largely predominates in the semiarid regions, and is found to be perfectly suited to conditions prevailing there. The ewes cross well with the Downs and long wools, and lambs from these crosses are quite popular with the butcher and feeder.

Within the past few years sheep husbandry in the pastoral sections of the Pacific Northwest has been completely revolutionized. Formerly the millions of sheep grazed upon these plains were kept for the special object of wool growing. Mutton was not even considered as a factor in the industry, there being no available market for the disposal of this product. Less than ten years since, range mutton was selling at 25 cents per quarter. Fortunately for the industry these conditions no longer exist, as at present mutton is paramount in value to wool, while the market lamb is destined in the near future to become the primary consideration.

THE RANGE SYSTEM.—The range man usually owns a small homestead on a creek bottom, of sufficient

area to produce hay enough to sustain the flock during a period of snow in the winter. The breeding of sheep in these sections is conducted upon a large scale, many breeders owning their thousands and depending almost entirely upon the public domain for pasturage. The flocks are generally divided into bands of 2000, which are placed in charge of a herder.

The overstocking and consequently diminished productivity of the range has forced the sheep breeder to adopt better and more economical methods for handling his flock. Only a few years back there was little, if any, attempt made to provide winter feed for the flock, but at present no prudent breeder would be willing to risk his flock's going through the winter without making ample provision for at least two months' feeding. The present range system is still somewhat primitive in character. A good or bad system too frequently means profit or loss to the flock owner. This, however, can be largely obviated, as there is but little excuse for retaining ewes so low in the scale at lambing time that their maternal instincts and milk secretions are entirely wanting, necessarily causing the lambing yard to be strewn

with a great number of puny outcasts, a large percentage of which ultimately succumb to cold and hunger. Feed can be grown cheaply in these sections, as there are large areas that can be transformed from sagebrush plains to alfalfa meadows and cornfields. This feed can be put up in such a manner that it may not only be used as a maintenance ration, but also to fatten sheep in the winter months, when mutton is selling for a good figure.

The present system of disposing of the feeders and mutton sheep in the late spring and early fall, and the lambs at weaning time, is not altogether advantageous to the grower, as at these seasons there is usually a depressed market, and prices necessarily rule low. The breeder of sheep should, whenever it is practicable, prepare them for market, and he should arrange to have them ready at a time when they will command the highest price. Of course, local conditions in many instances preclude winter fattening of sheep on the range, but there are a great number of sheep ranches that are favorably located for winter feeding.

WINTER FEEDING.—The wheat lands over a great portion of eastern Oregon and Washington will produce good crops of corn, which in the form of silage can be profitably utilized for sheep. At the Oregon experiment station last winter some Cotswold and Shropshire ewes were fed daily about three pounds per head of corn silage, one-half pound of oats, and what clover hay they could eat up clean. They became very fat on this feed. This silage can be put up very cheaply, with the present inexpensive method of constructing silos, and, if fed with very little alfalfa hay and grain, prime muttons and lambs can be turned off at any time during the winter, when prices are very satisfactory.

For the general flock, especially the breeding ewes, a little succulent feed in the form of silage, fed once a day during the winter, in addition to alfalfa, or vetch hay, or grain, will be wonderfully conducive toward maintaining the constitutional vigor of the flock, and will practically eliminate all danger of ewes' disowning their newborn lambs in the spring.

Although there are many apparently insurmountable obstacles in the way of the practical application of this system on a scale sufficient to accommodate the needs of sheep husbandry as usually conducted upon the range, under persistent effort these obstacles will disappear and the plan will be found feasible.

How to FEED.—Sheep are peculiarly sensitive and will quickly object to feed that has become tainted by coming in contact with their feet or droppings. This is governed somewhat by the degree of hunger, but no sheep will fatten upon feed which it consumes reluctantly; hence, for best results, feed free from all objectionable taints should be provided. The too common practice of the rangeman of feeding his flocks on the ground is not to be commended. For feeding hay or other roughage this method may be partially successful in arid or semiarid sections; but wherever the ground becomes muddy or befouled with the excrement of animals it will be found to be wasteful and unsatisfactory. The system of feeding on the ground precludes the use of such stuff as oats and mill feed. It is a better plan to provide feed racks with troughs attached. Equipped with these, whenever an exigency arises the flock can be economically fed any kind of grain or mill feed. These racks can be constructed cheaply, and many styles of them are in use.

When fed in large flocks the sheep should be driven from the feed yard during the time the racks are being filled; this will overcome the tendency to overcrowding and prevent injury to the sheep from the wagon and team. The quantity of this feed to be fed should be governed largely by the appetite of the flock, but it is not usually advisable to feed over three pounds of silage per head daily. For sheep weighing 125 pounds, about 2.5 pounds of silage and 1.5 pounds of hay will be ample; and if one-half pound of grain or bran be fed, slightly less hay will suffice. This will depend largely upon the condition of the flock and the severity of the weather. If grain is fed it is not a proper plan to mix it with coarse feed, as the sheep are inclined to root out and waste this feed in their efforts to get this grain.

The feeder should carefully look after all the smaller details connected with the winter feeding. The feed racks and troughs should be kept clean. Water should be convenient to the flock at all times, especially so if hay is fed in any considerable quantity. Salt is an indispensable adjunct to health and thrift, and should be kept within reach of the sheep so they can have it at their pleasure, or be supplied once or twice weekly. Long intervals between salting of the flock are frequently responsible for functional derangements of the digestive organs, accompanied at times with fatal results.

THE RANGE LAMB.—The Western lamb trade is rapidly assuming mammoth proportions, and the present system of rushing them into the market by the trainload demoralizes the trade and reduces the price to the grower. These lambs are cheaply grown, as no expensive concentrated feeds are used for their development. After shearing, or in the early part of the summer, the ewes and lambs are started for the mountains, where the tender, succulent grasses, pure water and enjoyable shade contribute to the health and thrift of the flock. The en-

vironments offered by these mountain ranges make them ideal summer pastures for suckling ewes; hence, the lambs grown there are noted for the production of typical carcasses of firm flesh. In the early fall or late summer these lambs are brought out of the mountains and shipped in large numbers to the markets of the middle West, where they are either slaughtered at once or sent to feed yards to be carried over in anticipation of better markets.

THE VINEYARD.

Vineyard Grafting vs. Bench Grafting.

TO THE EDITOR:—Bulletin 127, just issued by the State University, by Messrs. F. Bioletti and A. M. Dal Piaz, certainly contains much that is valuable in regard to resistant vines, the only safeguard we have against the inroads of phylloxera, and should be in the hands of every grape grower. The summary at the end is especially valuable, as it establishes facts which have generally been neglected so far. One of these, a practice which I followed and recommended sixteen years ago, is the cutting out of all the buds below ground of the stock, to prevent suckering, which is especially necessary with the rupestris stock, as that suckers badly. But while I admit that the bulletin touches many valuable points, and the process is and should be conclusively tried at experiment stations, and by vineyard proprietors who have time and money to spend on experiments, I most emphatically deny that no time is lost, nor that bench grafting, including all the coddling, first at the bench, where cuttings and graft must be selected of the same size to insure a complete junction, so that a careful hand can only put up 200 grafts per day as an average (as I was told by one of the advocates of this process), then be callused in a callus bed, from there transplanted into the nursery and then transplanted into vineyard the next spring, whereby 60% can be secured, is too circuitous a route for me. In all my operations in the vineyard, extending over a period of over fifty years, and in all my writings on the subject, I have always studied the practical side of the question and how to make grape growing easy to the new beginner. Being an old nurseryman, grafting apples at the bench by the 100,000, with the English cleft graft, as it is now called, I have also tried to graft the grape in the same way, but with very indifferent success. I found that many failed and did not make satisfactory growth when put in nursery and then transplanted to the vineyard, though I believe they averaged fully 60% what Messrs. Bioletti and Dal Piaz claim for their bench grafting.

Now let us look for a moment, dispassionately and calmly, at the extra labor bench grafting requires and its cost: First, they must be selected carefully, stock and scion of the same size, so that a man can at an average make only 200 grafts per day (\$1.25). Second, they are put into the callus bed, which must be prepared and carefully watched, which will cost about as much more (\$1.25). Then they must be removed from there into the nursery. This, with watching and rubbing off the roots which may form on the graft at the junction, and which are non-resistant, at least the same amount (\$1.25). Then the removal to the vineyard the next spring, working on the cheap plan, will certainly be \$1.25 more. Ultimate cost, \$5 for 120 vines, which is certainly a very low calculation, leaving out cost of cuttings, scions, etc.

Now let us look at the other side of the question, where the cuttings are planted immediately in vineyard, with the lower buds cut out, to prevent suckering, and only those above ground are left, to make the top for the young vine. We will confine ourselves to the Rupestris St. George, as this grows very easily from cuttings, and almost every one, if planted on well-prepared ground, can be counted on to live and grow with fair cultivation. No packing away, no callusing in bed, no transplanting to nursery, no transplanting into vineyard next spring. I have seen cuttings, thus treated, which were strong enough to be grafted the next spring, and produced five pounds of grapes the next fall. Mr. Paul Masson of San Jose assured me that he found no difficulty in making 90% of grafts grow on the stocks the second year from planting, grafting on Rupestris St. George as a stock, above the surface. There is another, and a very material, advantage in removing the non-resistant roots from the graft, which will have to be done every year if the junction is below the ground.

The bulletin contains many valuable suggestions, as stated before, but I firmly believe that, on the whole, it does not make grape growing easy, but more difficult, for the uninitiated, and will cause a loss of at least one to two years, with a great deal of additional expense and labor, which the practical vineyardist can not afford. And yet it is on these that the future of the vine industry depends, not on the theorists. Let us make the path of these, first, as easy as we can.

GEORGE HUSMANN.

Napa.

FRUIT PRESERVATION.

Apricots Fresh and Cured.

The Alameda fruit growers are proceeding enterprisingly by organization to secure for themselves such values as their fruit is really worth, and their investigations show some light upon the interesting question of the equivalence between fresh and cured apricots under conditions prevailing in the bay region of Alameda and Santa Clara counties at least.

A committee, consisting of Messrs. E. K. Strowbridge, D. McCarthy and E. J. Holland, appointed to see what arrangements could be made for drying apricots, visited San Jose and interviewed nearly all the prominent men connected with the drying business and also visited several well-known drying plants. The information gleaned is very satisfactory, as it was found that the capacity is sufficient to handle nearly the entire apricot crop of the members of the Alameda association if they should resolve to have it dried. Their report contains points of general interest, which we condense as follows:

COST OF DRYING.—As to the cost of drying, we could only get the figures of the actual expense of people having their own driers, which we herewith submit for general information. Taking as a basis the value of apricots at \$20 per ton, and that the proportion be five and one-half tons of green to one ton of dried, the cost of apricots of five and one-half tons at \$20 per ton would be \$110; cost of drying, \$30; estimated cost of cartage to and from depot, \$5; estimated cost of freight, and as an average from the several points, as San Leandro, etc., \$7.50. Total cost, \$152.50, or 7.06 cents per pound for the dried fruit. Here it may be observed that the cost of picking apricots for drying purposes is about \$5 less than when picked for the canneries, as for the latter purpose the trees have to be picked over oftener. The committee further ascertained that the prices for apricots this year will probably range from 7½ to 10 cents per pound. We were further told that our apricots sell 2 cents higher than the southern apricots and that the greater quantity of saccharine adds much in the weight of our fruit.

CONTRACTS FOR CURING.—On further investigation of the facilities we found that the drying plant of Mr. Wright, near Campbells, can be leased for the season. Upon our solicitations for bids to dry our crops, we were promised by several leading driers that they would submit their bids some time this week. So far we have received the following from a leading drier through the kindness of Chas. B. Bills, manager of Porter Bros. at San Jose, who writes as follows:

The best price that any of the driers have given me is from the Santa Clara Fruit Co., who will take the apricots from the broad-gauge depot here to the drier and have them properly dried and return the boxes to the car for \$8.50 per green ton. This will include dry grading them after they are dried into four grades and storing same until they can be moved—say thirty days after they are dried. Mr. Graham, a district freight agent here, has made a rate of \$1.20 per ton in carload lots, or 6 cents per 100 pounds from San Lorenzo to San Jose, the boxes to be returned at a cost of about \$2.50 per car. None of the other big driers would give me a figure as good as this, freight considered. The Wrights drier, near Campbells, regarding which we talked with the committee, made about the same price for drying, but the rate of freight would be about \$1.80 per ton.

DRYING AND CANNING.—From the foregoing we infer that the cost of drying will reach 8 cents plus a small fraction per pound, or about 1 cent more than the cost given in the above tabulation, and both being based upon the value of apricots to be \$20 per ton. Here, of course, we must take in consideration the fact of the drying as compared when picked for canning purposes, which, when considered, will still bring the 'cots to the value of \$20 per ton, and furthermore they will not be any limitations in regard to the size of the 'cots.

Mr. Bodwell of the Bodwell Evaporating Co. at San Leandro also promised to make a proposition and put it in the hands of the committee before the end of this week. We are pleased to say that, so far as we are assured upon the basis of the figures submitted, the 'cots will realize at least \$20 per ton when they sell for 7½ cents per pound, and will correspondingly realize a higher price per ton if the dried product sells at a higher price than 7½ cents per pound, which may be expected, as we understand that the market for dried apricots is excellent, all of which shows that the grower can safely refuse any offer less than \$20 per ton for apricots.

THE RESULT.—The Oakland Enquirer says that the trip of the committee to San Jose and their investigation of the fruit-drying question will result in a large amount of the Alameda county apricots being dried. The market for dried apricots is excellent and the prices offered by the driers is considerably larger than those offered by the canneries. The driers offer from \$20 to \$40 per ton, while the canners offer from \$20 to \$25 a ton.

The mean pressure of the atmosphere at tide level is usually estimated at 14.7 lbs. per square inch, so that with a perfect vacuum it will sustain a column of mercury 29.9 inches, or a column of water 33.9 feet high. In ordinary practice pumps should be placed not over 20 feet above water supply, nearer where possible.

Agricultural Review.

ALAMEDA.

HAYING BEGUN.—Niles Herald, June 8: Hay presses and harvesters are abroad in the land. Hay is heavy and grain light in most instances.

FRUIT ASSOCIATION ORGANIZED.—Haywards Journal, June 9: The Bay Shore Fruit Association has been formed. E. K. Strobbridge was elected president of the executive committee. It was decided to hold meetings in Haywards and San Leandro alternately. Twenty-six growers signed the by-laws at the initial meeting.

COLUSA.

PACKING HOUSE BURNED.—Colusa Sun, June 9: The College City Drying & Packing Co.'s plant, owned by J. M. Peart, was destroyed. Besides the buildings there were also burned two steamers, one grader, 500 sweat boxes, 500 packing boxes and about 500 feet of lumber.

CONTRA COSTA.

PASTURAGE BURNED.—Dispatch from Brentwood: Fire broke out on the Rancho de las Vaqueras Monday and is still burning. Thousands of acres have been burned, mostly pasture. Considerable hay has been burned, but the grain fields are safe so far.

FRESNO.

VINEYARD INTERESTS SOLD.—Fresno Republican, June 7: M. Theo. Kearney has closed the sale of a controlling interest in the Fresno Vineyard Company, amounting to three-fifths of the stock. Two-fifths belong to the estate of the late L. P. Drexler and one-fifth to Mr. Kearney. This stock has been held by these owners since the organization of the company twenty years ago. The property embraces 450 acres of land in the Easterby rancho, about 4 miles east of Fresno, of which 300 acres are in bearing vines. There is also a wine cellar on the property. The purchase price is about \$150,000 for the three-fifths and includes the portion of the money due for sale of last season's crop, which remains unpaid.

PACKERS ORGANIZED.—After being in session nearly all day the packers have completed their organization. The allotment question was considered, but no change was made from that of last year. The packers organized by the election of the following-named officers: W. M. Griffin president, Lee Gray vice-president, G. B. Noble managing director, W. S. Hoyt secretary and treasurer. The directors are W. M. Griffin, A. Gartenlaub, Lee Gray, John Bonnar of the Co-operatives, T. H. Lynch of Porter Bros., F. G. Baker of Inderrieden & Co. The packers last night signed their part of the contract with the association and all the document needs now is the signature of the board of directors of the Raisin Association.

GLENN.

LAND COMPANY INCORPORATED.—Orland Register, May 8: The Fimmel Land Company has been incorporated by John, Simpson, James, Bush and John Fimmel. Capital stock, \$65,000. The company will deal in real estate and live stock.

HUMBOLDT.

DISTRICT FAIR.—Eureka Standard, June 6: At a meeting of the directors of the Ninth District Agricultural and the Eureka Mechanical Fair Associations, September 17th to 22d, inclusive, were selected as the dates for the coming fair. President J. F. Quill has appointed the following committees: Finance—Willard Wells, W. H. Wallace, C. L. Pardee; speed programme—J. C. Bull, Jr., R. Gross, W. H. Wallace, F. H. Ottmer; transportation—E. E. Skinner, J. C. Bull, Jr., L. T. Darden, C. L. Pardee; agricultural exhibits—J. Anderson, Blue Lake; Thos. Crawford, Arcata; F. Helmke, Blocksburg; A. Putnam, Ferndale; L. L. Ayers, Eureka; pavilion—Willard Wells, E. E. Skinner, L. T. Darden, C. L. Pardee.

KINGS.

BEE-KEEPERS' ANNUAL MEETING.—Hanford Journal, June 8: The central California bee keepers held their annual meeting Wednesday. The matter of case and can supply was left in the hands of the business manager, F. E. Brown. The honey question came up for consideration. The secretary stated that he had the contracts prepared and would give all present an opportunity to sign them, which resulted in about 99% being signed. The contracts are the same as the ones used last year. The election of officers resulted as follows: President, Jas. Flory; vice-presidents, J. F. Balden and J. C. Griswold; secretary, F. E. Brown; treasurer, C. F. Flag. The next meeting will be held in Hanford on the first Wednesday in September.

LOS ANGELES.

COST OF PUMPING WATER.—Pasadena Star, June 6: At a meeting of the Farmers' Club, Mr. Stone read a paper on "Pumps and Pumping Plants." The author has a steam pump which cost \$747, and raises 15 miners' inches of water 100 feet at a fuel cost of \$3.20 for twelve hours. His machinery cost \$1500. He referred to an 8 H. P. gasoline pump owned by Mr. Day that raises seventy gallons per minute at a cost of 2 cents per 1000 gallons. A general discussion of different pumping plants followed, and it was the opinion that a man who has his own well and plant is a king compared to the one who has to depend upon a water company.

MENDOCINO.

FARMERS DRIVE GAME AWAY.—Laytonville, June 8: Ranchers in the vicinity of the mud volcanoes have organized to protect their crops against deer, which have become a menace to growing crops, and the panthers and lynx to their foals and pigsties. As the season of shooting is not at hand, nothing remains for the farmers but to organize and herd off the deer, and the other animals, it is argued, will follow them out of the vicinity. The plan adopted is to start out from some given point packs of shepherd dogs in four different directions, each pack to be followed by one or more horsemen, who are to follow their respective packs for 10 or 15 miles. This is to be repeated each day for about ten days, when, it is supposed, the animals will be frightened back to their original haunts.

MONTEREY.

AGRICULTURAL ASSOCIATION ELECTS OFFICERS.—Monterey, June 8: At the annual meeting of the Monterey County Agricultural Association the following officers were elected: Hon. Jesse D. Carr, president; J. B. Iverson, vice-president; J. J. Kelly, secretary. It was decided to hold a fair this year immediately after the coming racing meet in San Jose, and the following committees were appointed to take the preliminary steps toward that end: Premium committee—H. S. Ball, J. A. Tresceny, S. N. Mathews; speed committee—T. J. Field, C. Z. Herbert, A. Widemann.

NAPA.

CROP REPORTS.—Napa Register, June 8: The hay crop at Berryessa is far ahead of the farmers' needs and too much for their barns to hold. The grain harvest will commence about the middle of the month, though some will begin heading to-day. Wild oats growing through the grain are more prominent than usual, from the fact that the ground was too wet at the time of seeding. The crop will be about 90% of last year's.

SAN BERNARDINO.

ORANGE OUTPUT.—Redlands Citigraph, June 9: Up to the first of June southern California shipped 15,228 cars of oranges, as against 9399 for 1899, and 12,477 for 1898. But few remain to go forward. Valencias are now being marketed.

PACKERS INCORPORATE.—Redlands Facts, June 4: Articles of incorporation of the Redlands Eclipse Orange Association have been filed, with directors as follows: Orrin Porter, C. H. Lineau, E. D. Hardman, F. C. Beecher, A. B. Cook, J. A. Walton, J. E. Ward, M. L. Black, C. E. Lehman, W. D. Clark, Geo. A. Cook. The capital stock is placed at \$1500. It is proposed to have settlements at least three times each season. The fruit disposed of before January 1 is to be in one settlement; that between January 1 and April 1 in another, and fruit sold after April 1 to be in the third settlement. This is to give those having early and late fruits the advantage of the prices received.

APRICOT CROP.—Redlands Facts, June 6: The apricot crop is now so far advanced that an estimate of the yield can be made. From the data obtainable the crop for this region is placed at 750 to 800 tons of fresh fruit. Most of this will be handled by three driers. The Brockton drier will be run by A. Gregory and it is expected that he will handle 400 tons of apricots. Shaw Bros. will dry 150 tons, and at the old Cook & Langley drier about 200 tons will be dried. These are Royals. There is very little fruit upon the few Moorpark and Blenheim trees in this section. The old trees of the Royal variety will, where they have had proper care, have a full crop of fruit, while upon the young trees there is from half to two-thirds of a crop. The fruit is larger than usual and the flavor is fully up to the standard. Drying will begin in about ten days.

SAN JOAQUIN.

OIL BURNING TRACTION ENGINES.—Stockton Mail: A feature of harvesting this season is oil-burning traction engines. Already nine have been transformed into oil burners. Arched brickwork is put in

the fireboxes to prevent burning out the boilers. The burner is similar to those used on locomotives. The oil comes out in a wide, thin stream, and steam comes out under the oil and sprays the fuel to all parts of the firebox. An ingenious device to spray the oil before steam is started in the morning is a tank for compressed air. The air is forced into the tank with a hand pump; and when it is desired to start the fires, a stream of compressed air sprays oil until steam is started. There will be a three-fold advantage in the use of oil. It will be much handier than coal. A small tank on the top of the engine will carry enough to last for several hours, and it may be cheaper than coal. Estimates for the cost of running a traction engine of the kind used on the islands vary from \$16 to \$20 a day. It is estimated that about 200 gallons of oil will be used in a day, and it may be obtained at a cost of \$1.75 a barrel of forty-two gallons, making the daily cost of running an engine with oil not more than \$10. Another advantage is the lessening of danger of grain fires. There are no sparks caused by the burning of oil, and the danger of setting grain fields on fire will be reduced to a minimum. It is believed that, if the burning of oil becomes general, insurance men will agree to a reduction of rates on growing grain. Still another advantage, which will be appreciated especially by the firemen, will be that the fireman of an oil-burning engine will have practically nothing to do except to keep watch of the fire and regulate it by turning a stop-cock. It will not be possible, however, to combine the duties of engineer and fireman, for the engineer is needed to guide the engine, and some one must be behind the furnace to watch the fire constantly. The oil which will be used will be crude petroleum from the wells in various parts of this State.

SAN LUIS OBISPO.

HEADERS AT WORK.—San Luis Obispo Tribune, June 8: On Monday the work of heading grain around San Miguel and Estrella and on the Nacimiento commenced. Wednesday all the headers in the northern part of the county commenced work. The grain crop on the Coburn ranch in the Salinas valley, which was irrigated from the river, has already been harvested. It was cut with a binder. On the Santa Margarita ranch the late sown grain is still a dark green.

SANTA BARBARA.

DISTRICT FAIR.—Santa Barbara Press, June 7: The district fair will be held in Santa Barbara September 19, 20 and 21. This will follow immediately after the State Fair. Charles Sherman is president of the board, and the other directors are J. K. Harrington, G. C. Packard, T. P. Izard, H. F. Vail, Frank M. Glass and E. P. Dunn. The secretary is H. B. Braslow and treasurer George S. Edwards.

SANTA CLARA.

FAIR GROUNDS SOLD.—San Jose Mercury, June 9: The Santa Clara Valley Agricultural Society has sold its interest in the fair grounds, comprising 76.75 acres, to the San Jose Land & Improvement Co. for \$20,000, with a covenant that each life member of the old society is to receive one share of the capital stock of the new company, and these shareholders, who number about 186, will constitute the new company.

SOLANO.

FIRST PRUNES.—Vacaville Reporter, June 2: The first shipment of Prunus Simoni was made May 30 from the Ayer & Redd ranch.

TO HANDLE APRICOT PITS.—F. C. Chapman will locate a plant here for cracking the stones of apricots. It is expected that there will be close to 1000 tons of apricot pits in Vacaville this season.

VALUE OF CHERRY CROP.—We think from all the statistics at present available that the cherry crop at Vacaville will net orchardists close to \$40,000 this year. In view of the fact that for several seasons back the cherry crop has not been particularly good, this will be a substantial addition to the profits of orchardists.

HARVESTER RUNAWAY.—Dixon Tribune, June 8: The first harvester runaway occurred last week on J. H. McCune's ranch. The machine is the property of the Wolfe Bros. The runaway was one of the most disastrous that has taken place in this section. The damage to the machinery is said to be too great to warrant repair, and another machine is to be put into commission to finish the harvesting operations on the place.

CHERRY SHIPMENTS CLOSED.—Suisun Republican, June 8: The shipment of the crop of cherries for 1900 has been brought to a close. The amount shipped from Suisun is over thirty-five carloads—a record which has never been beaten but once, when about forty carloads were forwarded. Last year the crop was almost a total failure and only seven or eight car-

loads were raised in the valley. During the two years of drought a large number of trees were killed, so that, considering the number of bearing trees, this is probably the largest crop ever raised in this vicinity. Prices have been extremely satisfactory. The average net receipts to the grower over all expenses will be somewhere between 60 and 75 cents per box. This means that the fruit growers of this vicinity will receive this year for their cherries more than \$50,000 clear of all expenses.

SONOMA.

WINERIES LEASED.—Healdsburg Enterprise, June 9: The wineries of Miller & Hotchkiss at Windsor and Trenton have been leased by Lachman & Jacobi, who intend operating both plants to the fullest capacity this vintage. W. C. Chisholm, who has superintended the Windsor winery, retains the position under Lachman & Jacobi.

COLONY ELECTS OFFICERS.—Santa Rosa Republican, June 4: At the nineteenth annual meeting of the Italian-Swiss Agricultural Colony the officers and board of directors were re-elected. The officers are P. C. Rossi, president; Dr. G. Olino, vice-president; A. Sbarboro, secretary; A. E. Sbarboro, assistant secretary; London and San Francisco Bank, treasurer; D. Friedenrich, attorney; Dr. Paolo de Vecchi, Charles A. Malm, A. Merle, M. J. Fontana, I. Cuenin and D. Paroni, directors. The colony this year has declared a dividend of \$10 per share and an extensive improvement of the vineyard and colony possessions has been ordered. The colony organized in 1881. Its possessions are over 1000 acres of vineyard at Asti, a winery at Fulton and a large vineyard at Madera.

OREGON.

PRUNE GROWERS ORGANIZE.—Portland Oregonian, June 7: The prune growers of Oregon and Washington perfected permanent organization yesterday, under the name of the Cured Fruit Association of the Northwest. Seventy-five per cent of this year's output of dried prunes has already been subscribed, and it is thought that 90% will be subscribed before the end of the season. The purpose of the organization is to prevent a fluctuation in the price of the dried fruit, to find a market for it and to see that it is properly crated and shipped. At the meeting yesterday the following fifteen growers were chosen as directors of the association: A. J. Weeks, E. C. Stewart, Medford; William Kincaid, Springbrook; Charles Long, Silverton; J. H. Eletcher, C. G. Shaw, H. C. Bostwick, Vancouver; J. P. McMinn, Walla Walla; Frank S. Wheeler, North Yakima; C. R. Sweat, Blalock; S. P. Kimball, Dallas; William Galloway, Oregon City; W. K. Nowall, Dilley; F. B. Chase, Eugene; F. D. Evans, Cleveland. After qualifying, the directors elected the following officers: J. H. Fletcher, president; C. B. Sweat, first vice-president; F. S. Wheeler, second vice-president; W. K. Newall, treasurer; Henry E. Dosch, secretary. The business of the association will be managed by an executive committee, consisting of the president, first vice-president, E. C. Stewart, S. P. Kimball and William Kincaid.

WASHINGTON.

GRAIN PROSPECTS.—Seattle Times, June 6: Never in the history of Walla Walla valley and eastern Washington has there been experienced such a prolific year as is promised in 1900. The grazing upon the ranges was exceptionally fine, which had the effect of producing the heaviest and finest fleeces ever sheared in this section. Cattle are in prime condition for market, while range horses are fat and sleek, presenting an appearance never before witnessed at this season of the year. The stand of grain is the grandest ever had in eastern Washington, while the yield, is conditions continue, will be a third greater than ever before. On Eureka flat the grain promises a yield of forty to fifty bushels to the acre, while the fields at the foot of the mountains promise from fifty to sixty bushels to the acre.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

Landing of the Pilgrim Fathers.

The breaking waves dashed high
On a stern and rock-bound coast,
And the woods against a stormy sky
Their giant branches tossed;
And the heavy night hung dark
The hills and waters o'er,
When a band of exiles moored their bark
On the wild New England shore.

Not as the conqueror comes,
They the true-hearted came;
Not with the roll of stirring drums
And the trumpet that sings of fame;
Not as the flying come,
In silence and in fear;
They shook the depths of the desert
gloom
With their hymns of lofty cheer.

Amid the storm they sang,
Till the stars heard and the sea;
And the sounding aisles of the dim woods
rang
To the anthem of the free:
The ocean-eagle soared
From his nest by the white wave's
foam,
And the rocking pines of the forest
roared;
Such was their welcome home.

There were men with hoary hair
Amid that Pilgrim band;
Why had they come to winter there
Away from their childhood's land?
There was a woman's fearless eye,
Lit by her deep love's truth;
There was manhood's brow serenely high,
And the fiery heart of youth.

What sought they thus afar?
Bright jewels of the mine?
The wealth of seas, the sports of war?
They sought a faith's pure shrine!—
Yes, call that holy ground,
The soil where first they trod
They have left unstained what there they
found,
Freedom to worship God.

—Felicia D. Hemans.

An Old Maid's Marriage.

Miss Mattie was in a dilemma. She put on her spectacles, carefully adjusted her cap, and rang the bell for Prudence, her hand-maiden, who appeared in Quaker gray and a snowy cap.

"Prudence," said Miss Mattie, "what did the doctor's boy say?" "That worldly youth, mistress, attempted to pass the time in vain discourse concerning certain maidens who attire themselves in blue raiment and smite a heathen instrument called the tambourine."

"Yes, yes, Prudence," interrupted Miss Mattie, "I dare say. But what did he say about the letter?"

"He said, mistress, that he was to take back an answer; and I have entreated him to much profitable conversation until the answer be written."

Miss Mattie looked perplexedly at the grave, serene-eyed little Quaker maid.

"How old are you?" she asked.

"Twenty, mistress," said Prudence.

Miss Mattie gazed at the unopened letter on the table, and then at Prudence.

"Prudence, you are young," she said, "but wiser than your years. Have you—have you ever had a sweet-heart?"

Prudence looked a little unprepared for this remark, but she was conscientious.

"Truly," she said, "there is one stalwart youth, a carpenter, who has flattered me many times when going to meeting, but to whom I have not been drawn, whereat he is much provoked, and threateneth to fare forth to foreign lands and forget me," placidly answered the little maid.

Miss Mattie still struggled with a certain shameful consciousness that she had wavered. What a tower of strength Prudence was.

"Did he ever kiss you?" she asked, in a whisper.

Prudence opened her blue eyes widely.

"Surely, mistress, it is the manner of young men to indulge in such unseemliness unless discouraged."

"And did you discourage him?" asked Miss Mattie.

A faint color stole over the pretty

little maid's face. She looked distressfully at the carpet.

"The youth was strong, and I but slight," she answered, in confusion; "and he was about to depart, and—and—"

"W-what did he do?" asked Miss Mattie, eagerly, still holding the letter in her hand.

"He saluted me, mistress," answered Prudence. A faint smile played over her lips at the recollection.

"Sit down, Prudence," said Miss Mattie. "I want to ask your advice, child. You know more about men than I do."

Prudence sat down. Miss Mattie regarded her as a daughter, although Miss Mattie was only forty-five. But people in Little Bingleton prided themselves on looking old. It was thought to savor of flightiness if folks adopted modern fashions or traveled often to town. Miss Mattie was the only daughter of the late Doctor Sewell. Ever since her father's death, which had happened about ten years ago, she had lived in her own pretty little cottage on the outskirts of the town. People who remembered her fifteen years back said that Miss Mattie was then very handsome. She was still a sweet-faced woman, with rich auburn hair, and placid blue eyes. There had been whispers of a girlish romance a long time ago; but by-and-by people looked upon her as a confirmed old maid. The years passed, and still Miss Mattie lived her quiet, uneventful days, until Doctor Slurke, the one practitioner in the place, suddenly discovered that Miss Mattie was wasting her life.

"You've a mission to fulfill," he had said.

"What is it?" placidly demanded Miss Mattie.

"I will go home and write it to you," retorted the doctor, attacked by a sudden fit of shyness.

His manner had occasioned Miss Mattie some misgiving, but she had concealed them under her usual placid exterior until the arrival of the fatal letter.

The letter lay upon the table. Miss Mattie dared not open it. It seemed as if the occasion demanded a solemn ceremony of some sort.

"Open it, Prudence," she said, suddenly, turning to the little maid.

Prudence took the letter in her hand and opened it with her usual deliberation.

"The man has a concern to marry thee, mistress," she said, after a steady perusal of the letter, and then read aloud:

"Dear Madam—I never proposed to any one before—haven't had either the time or the inclination, and I have vainly consulted all the literature on the subject. Most of it seems to me to be rubbish. You are a sweet, amiable woman, of rather melancholy disposition; I am business, savage, irritable, loud and overbearing. Don't you think that we each have what the other lacks? I'm tired of living alone, so must you be also. Couldn't we join forces and travel together? You must be very solitary, and it is always so comforting to have a man in the house in case of burglars or fire or anything of that sort. Will you marry me? If so, kindly return a note in the affirmative by bearer, and I'll come up this evening to talk it over. If my letter is lacking in delicacy, remember that doctors are accustomed to come straight to the point. Which shall it be? Yes or no? I shall be walking impatiently up and down my garden—an exceedingly rash thing to do in this east wind—until I receive your reply. Yours very faithfully, Silas Slurke."

"Is there nothing more in the letter? Nothing about love?"

"The letter lacketh worldliness of that kind," answered Prudence.

Miss Mattie had not lost all sentiment. She recalled that episode of her vanished youth when Reuben Rountree had declared that he worshipped her. Reuben was a farmer's son and Miss Mattie's position had been declared a fatal obstacle to Reuben's pretensions. Whereupon Reuben departed to lands unknown in search of fortune. He had taken a lock of Miss Mattie's hair with

him and she still cherished in secret a little black daguerreotype of the departed swain. All this happened a quarter of a century ago.

Miss Mattie did not like to be hurried. And yet, as she sat there holding Doctor Slurke's letter her youth came back. How the boy had loved her. She recalled his foolish speeches and his fondness for her yellow locks and blue eyes. Doctor Slurke's letter had unsettled her. Though she felt she could not marry a man who never wiped his boots on the mat, yet there might be hidden depths of love within him. He was a doctor, too. That was another recommendation.

Miss Mattie temporized.

"I will ask him to tea, Prudence," she said, as she sat down to her desk, and wrote that she must have further time in which to consider Doctor Slurke's flattering proposal. "And, Prudence, see that your pikelets are plentiful and of the best. Nothing comforts a man so much as a good tea."

Miss Mattie was a little bit ruffled by the events of the day. She went upstairs and looked long and lovingly at a certain little tin portrait. Then she put on her best lavender silk dress and went downstairs.

A man's step scrunched the gravel outside, and the next moment an unknown voice demanded if Miss Mattie Sewell lived there.

Miss Mattie thrust the daguerreotype into her bosom and went out.

"What is it, Prudence?" she asked.

"A wayfarer from over the seas, who would have speech with thee, mistress," said Prudence, quietly.

Miss Mattie felt an odd sensation. What if this stranger brought news from Reuben?

The stranger held a letter in his hand.

"I've just come down on the ears with a letter from an old friend," he said. "Can I come in?"

"With pleasure," said Miss Mattie.

He sat down in an armchair by the fire. The cat jumped onto his knee and went to sleep.

Miss Mattie sat facing the window, feeling reassured. She trusted that cat's instinct almost as much as she did the wisdom of Prudence.

"Excuse me," said the stranger, handing her a letter. "Won't you read this, and then we'll talk?"

Hospitality was a sacred rite with Miss Mattie.

"I trust that you will partake of my poor hospitality first, M-Mr—?" she said, with a stately bend of the head.

"Alpheus P. Winterbottom. I'd be sorry to go away without doing so," answered the stranger, heartily, as Prudence appeared with the pikelets. "Prudence," said Miss Mattie, solemnly, "make some more."

"You're right, ma'am," said the stranger, surveying the little dish. "I was thinking I could eat the whole lot of those cunning little cakes."

Miss Mattie laughed. Her tea parties were usually very solemn and stately affairs. Mrs. Pennifather, the rector's wife, always came in a copper-colored silk. Miss Twinkleton, too, invariably donned her best old yellow lace ruffles for the occasion. The stranger, however, wore garments of a transatlantic cut and had a pointed beard. He was a fine, handsome man of about 45. As Miss Mattie handed him a fragile cup the last of the pikelets had disappeared.

Another step sounded on the gravel path outside.

"It's Dr. Slurke," she said, uncomfortably. "I—I had quite forgotten him."

Dr. Slurke opened the door, and recoiled in amazement. There was Miss Mattie chatting genially with some foreign ruffian whom he had never heard of. It was indecorous; it was vulgar; it was unfeeling; it was aggravating; it was unprofessional, and the kind of thing which he was not going to put up with from any lady, however nice she might be under ordinary circumstances. So he pulled his stubby beard and glared at the stranger. But, unfortunately for the doctor, Mr. Alpheus P. Winterbottom was not overwhelmed.

Miss Mattie half rose from her chair. "Good evening, Dr. Slurke. Won't

you come in?" she inquired, with the sugar tongs poised in her hand.

This was another insult. She was pouring out her best tea and giving it to the man in the chair. Dr. Slurke did a very foolish thing. He lost his temper. He drew himself up to his full height—5 feet 3—and scowled on the pirate king in the armchair.

"Won't you come in?" tremulously repeated Miss Mattie.

Dr. Slurke bowed sarcastically.

"I thank you; no, madam," he said. "I only came in to inform you that I had caught a cold in my garden whilst awaiting your pleasure."

The other man looked quietly up.

"I guess you ought to be proud of it," he said, in his objectionable American way.

Dr. Slurke bowed to him with withering irony.

"I—eh—was not aware that I was asking a conundrum," he said. "May I inquire who I have the pleasure of addressing?"

The stranger smiled. "My name's Winterbottom—Alpheus P. Winterbottom."

Miss Mattie let fall the sugar from the tongs.

"Oh, Dr. Slurke," she said, "I am so sorry. You see, it was rather a difficult question to answer, and—"

"I will thank you to be good enough not to discuss it before this gentleman," the doctor ejaculated.

"But I—I really—" And Miss Mattie felt inclined to cry.

Mr. Winterbottom was moved by Miss Mattie's distress.

"Shall I make him shut the door from the outside?" he asked, quietly caressing the cat. "I think, madam, you'd feel more comfortable if this turkey cock sort of person had gone home to roost."

"I was not speaking to you, sir," said the doctor. "My remarks were meant for this lady."

"Madam, I take my leave," said the angry doctor. "As for you, Mr. Winterbottom, you shall hear from me."

"Not professionally, I hope," said the imperturbable stranger. "Don't distress this lady any more, or I'll really have to come and reason with you."

The doctor withdrew, speechless with rage. Poor Miss Mattie began to cry.

The stranger put the cat down and gently approached the table.

"Madam," he said, "that extremely ill-tempered person will be better tomorrow. If he ain't, I guess I'll have to reason with him near a pond."

"Oh, please don't," said Miss Mattie, feeling comforted by the stranger's bulk. "I—I kept him waiting for an answer to—to an extremely delicate matter this evening, and—and he's cross with me."

The stranger led Miss Mattie to the armchair.

"Now, sit there, madam," he said, in his gentle, kindly way. "I'll brew this tea for you. Assimilate those cunning little cakes, and you'll feel better. One lump of sugar, isn't it?"

"Yes," said Miss Mattie, feeling that support from conscious strength which delights women.

"And the cream?" said the stranger, holding up the dainty little cream ewer admiringly. "My, ain't that little pitcher pretty? And the fire! Beats our stoves hollow." He handled the dainty tea equipage with jealous care, and waited on Miss Mattie so nicely that all her fears vanished.

"I thank you, Mr. Winterbottom," said Miss Mattie, in her simple, friendly way. "It—it was foolish of me to—to be so frightened. The doctor has been very kind to me."

"Then I'll let him off the pond," said Mr. Winterbottom, as if making a concession to sentiment.

Mr. Winterbottom took up the letter with his customary deliberation.

"Now, madam," he said, "I'll read it to you, and when I'm pumping over a cahot you tell me to pull up, and I'll drive quietly."

Miss Mattie did not understand what a cahot was. The stranger explained that it was a hole in the road in winter, and that a sleigh had to glide gently over and not take it flying, for fear of bumping the bottom out.

"Is—is the letter from Mr. Rountree?" asked Miss Mattie, with quivering lips.

The stranger looked at her admiringly.

With this glance of admiration was a smile and a twinkle of kindly, merry eyes. Miss Mattie was disturbed.

Something in the twinkling eyes awoke memories of apple blossoms and a sturdy young fellow and a yellow-haired girl lingering in the twilight in the old apple orchard. She could hear the impassioned words of the youth, and the snip of the shears that severed the yellow curl, which was to be his amulet until kindlier fate brought together their divergent paths.

In the meantime the merry-eyed giant had opened the letter and Miss Mattie's outstretched hand received—a lock of curly yellow hair.

When Prudence returned with a fresh supply of pikelets her wise young eyes took in the situation at a glance, and she discreetly retreated without interrupting the long-separated lovers.

Congress of Women.

A notable congress has been in session at Des Moines, Iowa, during the past week. Several hundred delegates, representing Mothers' Clubs of twenty-three States, have been conferring in the interests of reform and improvement.

They know that, if personal and civic virtues are to be advanced, it must be by the education of the child, and that the child must be reached through the parents—primarily the mother—and the leaders of the movement are striving in every way to arouse and enlist the mothers of the United States to the full measure of their duties in this respect. They believe that the easiest and cheapest way to dispose of the criminal class is to dispense with it by educating to better things and higher standards.

The National Congress of Mothers, of which Mrs. Theodore W. Birney of Washington is the head, has met with remarkable success along two lines—investigation of the laws that govern our dependent defective and criminal children and the establishment of a closer connection between the mother and the school.

The importance of meetings such as at Des Moines can hardly be estimated. Aside from the broadening influence they have upon the women as individuals, they enable them to concentrate in certain well-defined directions efforts that might otherwise be ineffective through too great diversity of aim, and they are teaching women that responsibility for good citizenship and good government does not lie upon the shoulders of men alone.

Invalids' Food.

In a recent lecture on invalids' dietetics, given by Miss Helen Louise Johnson, she said: Three things must be observed with the greatest care, and must receive minute attention in the preparation of an invalid's food. They are the selection, preparation and the serving of the food. Absolute freshness and sweetness, soundness of meat and fish, freshness of eggs and vegetables, ripeness and sweetness of fruits must be insisted upon. I need not emphasize the necessity for care in preparation, which first means a selection of ways. No fried foods may be given, and sauces made in the usual way are out of place. Potatoes should be baked, unless the attending physician permits some other method. Regularity of feeding is one of the essentials. It is well, if possible, always to bathe the patient's face and hands before each meal. One of the most important considerations is quantity of food. In cases of debility, small quantities of concentrated nourishment are generally the rule. Hot foods must be served hot, and cold cold. Everything should be covered as far as possible. The importance of serving everything in the most attractive manner cannot be overestimated. Patients may appear too ill to notice details, but the horizon of the sick room is a very small one, and a crooked spread

or a few drops of spilled food may be actually distressing. Remember the comfort of the patient is no small degree dependent upon the conditions of the mouth, and it should be rinsed if possible after each meal with an antiseptic wash.

To June.

Month of the perfect love,
Month of the perfect leaf—
The mellow-mourning dove
Thine only note of grief—
Oh, let me hide within thy shade a sorrow
past relief!

Thou, unto whose employ
All Nature's arts belong—
Fragrance and warmth and joy;
Admit me to thy throng.
Thou canst not dull the pang, but, oh!
tune every chord to song!

—Century.

Five Cents' Worth of Travel.

We know a bright boy whose great longing is to travel. His parents have no means with which to gratify him in that respect. He occasionally earns a few pennies by selling papers and doing errands. Instead of spending the money foolishly, he carefully treasures it in a small iron box, which he calls his safe. One day, after earning five cents, he dropped them into the box, in the presence of a companion about his own age, and exclaimed, "There goes five cents worth of travel!"

"What do you mean?" asked the other boy. "How can you travel on five cents?"

"Five cents will carry me a mile and a half on the railroad. I want to see Niagara Falls before I die. I am nearly four hundred miles from them now; but every five cents I earn will bring them nearer, and a great many other places that are worth seeing. I know it takes money to travel; but money is money, be it ever so little. If I do not save the little, I shall never have the much."

Some boys squander every year the cost of a coveted trip to some point of interest. Let them remember that every five cents saved means a mile and a half of the journey. Small amounts carefully kept will foot up surprising results at the end of the year, and almost every doctor will testify that five cents' worth of travel is better for the health of the boy than five cents' worth of sweets.—Edward Foster Temple.

Blanching Almonds.

There are several ways to blanch almonds: some brown them in butter, some in olive oil, and some use no grease at all. I think this last named way is more wholesome, and I find that they are very nice and brittle, and may be kept for weeks without becoming rancid, states a writer in the Farmers' Advocate. If kept until they lose their crispness, it may be restored by placing in a moderate oven for a few minutes. After removing the shell, pour boiling water over the kernels and let stand for a few minutes until the brown hull slips off easily by pressing between the thumb and fingers. Then pour off the water, slip off the hulls, putting the kernels, not heaped over each other at all, in a baking pan, and while they are still moist, sprinkle well with salt, and set in a moderate oven. If the oven is very hot, leave the door open part of the time. Shake and stir them often, lest they burn or get too brown. They should be well dried through, and very light brown when done.

Women to Have a Voice.

Women will henceforth be permitted to have a voice in the government of the Methodist Episcopal Church. This has just been decided upon at the conference of that church in Chicago. After years of debate and many adverse decisions, the brethren have decided that, inasmuch as the women do a large share of the church work, they should not be forced to keep silent, Saint Paul to the contrary notwithstanding.

The Charm of Pleasantness.

Every woman has an inherent longing to be attractive, and if she has not, she should have. For what would this chaos, doubt and strife of our daily warfare become were it not that sweet woman interuses into it her calming, cheering influences?

And the natural tribute men pay to woman's attractive qualities is admiration. If a woman is incapable of appreciating the homage of man, and treats man's highest gift as though it were vanity, she makes a serious mistake.

But how can a girl best gain the love and respect of others? This is an all-important query, and it is best answered by a concrete illustration drawn from life. Miss A is beautiful. Her statuesque form and magnificent face are always the same, with a cold, distant aspect which even her undoubted beauty does not redeem from reproach. Miss B is neither talented nor lovely, but she meets one heart to heart, and continued pleasantness has a charm which draws around her a devoted circle of appreciative friends. She is her father's confidante, her mother's joy, the recipient of her brother Jack's love trouble and sister Nellie's struggles with French.

MARRIAGE is the strictest tie of perpetual friendship, and there can be no friendship without confidence, and no confidence without integrity, and he must expect to be wretched who pays to beauty, riches or politeness that regard which only virtue and piety can claim.—Johnson.

DOMESTIC ECONOMY.

Hints to Housekeepers.

Strong ammonia and water will take out grease spots.

A persistent washing and rinsing in milk will remove an ink stain.

Apply a drop of oil to the door hinges to keep them from creaking.

A cork soaked in oil makes a good substitute for a glass stopper.

Try a little baking soda and hot water when cleaning kitchen utensils.

Kitchen tables may be made "white as snow" if washed with soap and wood ashes.

Scour wooden utensils—pie, meat and bread boards—with cold water and sand soap. It will make and keep them whiter.

Zinc may be polished with a rag moistened with coal oil, but it must first be washed clean and wiped dry with a soft cloth.

To remove a glass stopper that has become tightly wedged, put a drop or two of sweet oil in a crevice about the stopper and it will loosen in an hour or two.

Copper kettles and other articles may be successfully cleaned by rubbing them with half a lemon dipped in salt. When empty they should be rinsed in clean water and polished with a soft cloth.

To clean a porcelain kettle, fill it half full with hot water and put in a tablespoonful of powdered borax; let it boil. If this does not remove all the stains, scour with a cloth rubbed with soap and borax.

To purify the air of the cellar and destroy parasitical growth, place some roll brimstone in a pan, set fire to it, close the doors and windows as tightly as possible for two or three hours. Repeat every three months.

As a relish for roast duck or game orange salad is good. Slice six oranges for eight persons. Grate the rind of one and add the juice of one lemon, three tablespoonfuls of salad oil or melted butter, a pinch of cayenne pepper, and pour over the oranges.

To enamel furniture which was originally white, there is no need to scrape the article. Give it a coat of white paint, and when that is thoroughly dry put on the white enamel. To be really successful the enamel should be baked on, but as this is impossible in a home

the above method is about all a housekeeper can try.

Save the scraps of a new gown to mend it with. Linen and cotton washed often is better than new for darning white goods. Fine darning cotton is better than silk for darning black woollens. Silk cuts kid. Use sewing cotton to mend gloves.

Mousseline de soie and chiffon are best cleaned by washing in a pure white soapsuds. After pressing gently between the hands shake, spread out immediately and iron while wet. If left to dry before pressing the soft material will shrink and wrinkle, and the threads will separate in pressing. A few drops of gum arabic dissolved in the water in which the mousseline de soie is rinsed will supply crispness if desired. Washed in this manner these fabrics have all the appearance of being perfectly new.

Domestic Hints.

RICE PUDDING.—Two quarts of milk, half a cup of rice, two-thirds teacup of sugar and one cup of raisins. Bake in a slow oven over three hours, stirring occasionally.

RYE BREAKFAST CAKES.—Two cups of rye meal, one-half cup of molasses, one and one-half cups of sweet milk, one teaspoonful of soda, a little salt. Mix very soft and bake at once in a rollpan or muffin rings.

BUCKWHEAT CAKES.—For a family of four or five, take one quart of warm water, two spoons of Indian meal, small cup of yeast, salt, with enough buckwheat to make a stiff batter. Let it rise all night.

KISSES.—Take one tablespoonful of sugar to the white of one egg. Flavor with vanilla, and beat with a spoon until quite light. Drop in little heaps on white paper and bake in a cool oven. They must not get brown, or even yellow, but must be hard on top.

WALNUT CAKE.—One cup of sugar, one-half cup butter, one-half cup sweet milk, three eggs, two cups flour, two teaspoonfuls baking powder, one cup stoned raisins and one cup chopped walnuts. Flour the nuts and raisins before putting them in the cake.

NUT FILLING.—Take two ounces of sugar and make a syrup of it with three tablespoonfuls of water, to which add three ounces of walnuts, peeled and pounded fine in a mortar, with the addition of a tablespoonful of cream. Add then half a teaspoonful of vanilla essence and one ounce of candied lemon peel, minced. Stir until thick.

CHOCOLATE PUDDING.—Let one pint of milk come to a boiling point. Add one large spoonful cornstarch (wet in a little milk), one-half cup sugar, one teaspoonful butter and three heaping tablespoonfuls grated chocolate, having been melted in a little boiling water; boil until thickened, pour into a mold and place on ice. Serve with flavored sugar and cream.

COCOANUT PIE.—Line a pie tin with rich puff paste; take a small pint of milk and let it come to a boil; thicken with a little cornstarch dissolved in two tablespoonfuls of cold milk; remove from the fire and add two well-beaten eggs that have been mixed with one small cup of sugar, one tablespoonful of butter and one small cup of freshly-grated cocoanut; fill the pie tin and bake; beat the whites of three eggs to a stiff froth; add half a cup of sugar and half a cup of cocoanut; spread over the pie and return to the oven, but do not let it brown.

BANANGE.

One teaspoonful of this extract in a quart of Ice Cream makes a most delicious dessert. If you are tired of the old standby flavors try BANANGE. It is an entirely new and distinct flavor. To introduce it we make this offer: Send fifty cents, or, still better, twenty-five cents and the names and addresses of ten housekeepers in your locality and we will mail you a large bottle postage free.

L. D. WALKER & CO.,
Extracts and Fruit Syrups,

416 MARKET ST., SAN FRANCISCO.
LODGE AND CHURCH SOCIALS SUPPLIED FREE.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, June 13, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	June.	July.
Wednesday.....	66 1/4 @ 67 1/4	67 @ 68 1/4
Thursday.....	68 1/4 @ 70	68 @ 70
Friday.....	70 @ 71 1/4	70 1/4 @ 72 1/4
Saturday.....	70 1/4 @ 71	72 @ 71
Monday.....	72 1/4 @ 73	74 @ 72 1/4
Tuesday.....	72 1/4 @ 73	74 @ 73

*Holiday.

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday.....	5s 8 1/4d	5s 8 1/4d
Thursday.....	5s 9 1/4d	5s 9 1/4d
Friday.....	5s 10 1/4d	5s 10 1/4d
Saturday.....	5s 11 1/4d	5s 11 1/4d
Monday.....	5s 11 1/4d	5s 11 1/4d
Tuesday.....	5s 11 1/4d	6s 0 1/4d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec. 1900.	May, 1901.
Thursday.....	1 03 1/4 @ 1 03	— @ —
Friday.....	1 03 1/4 @ 1 05	— @ —
Saturday.....	1 03 1/4 @ 1 02 1/4	— @ —
Monday.....	1 05 @ 1 04 1/4	— @ —
Tuesday.....	1 04 1/4 @ 1 03 1/4	— @ —
Wednesday.....	1 03 1/4 @ 1 03	— @ —

WHEAT.

The wheat market since last review has exhibited more evidence of strength, both here and abroad, than for many weeks previous. The improvement was more particularly in options or in the speculative field, but the spot market was also favorably affected. The basis of the improved tone was the bad condition of the crop in the middle West. According to the Government report, the Winter wheat area was reduced in May 1,676,000 acres, and, in spite of the abandonment of this area, the condition of Winter wheat declined in May 6.2 points. The Winter wheat area on June 1st was 24,908,000 acres. Preliminary reports indicate a decrease in Spring wheat acreage of about 567,000 acres, or 2.9%. The condition of Winter wheat on June 1st was 82.7, against 88.9 May 1st, 67.3 a year ago, and 80.7 average for past ten years. Condition of Spring wheat is given at 87.3, against 91.4 a year ago, and 93 average for past ten years. In a considerable portion of Europe, particularly in the Danubian provinces and in southern Russia, the crop was reported in improved and generally fine condition.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1900, delivery, \$1.02 1/2 @ 1.05.
May, 1901, delivery, — @ —.
Wednesday, at regular noon session of Call Board, December, 1900, wheat sold at \$1.03 1/4 @ 1.03; May, 1901, — @ —.

California Milling.....	\$ 95 @ 1 00
Cal. No. 1 shipping, alongside.....	95 @ —
Oregon Valley.....	92 1/4 @ 97 1/4
Walla Walla Blue Stem.....	95 @ 1 00
Walla Walla Club.....	87 1/4 @ 97 1/4
Of qualities wheat.....	87 1/4 @ 92 1/4

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	-s-d @ -s-d	6s2d @ 6s2 1/4d
Freight rates.....	27 1/4 @ 30s	38 1/4 @ 40s
Local market.....	\$1 06 1/4 @ 1 08 1/4	95 @ 97 1/4c

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

STOCKS OF GRAIN IN STATE JUNE 1.

Stocks of cereals, etc., in the State on June 1st, 1900, and previous dates, are given by the Produce Exchange as follows:

	1900.	1899.	1898.	1897.
Flour, bbls.....	95,090	70,906	87,380	94,960
Wheat, cts.....	8,367,840	3,394,160	3,152,680	1,733,880
Barley, cts.....	2,108,520	232,420	943,060	758,600
Oats, cts.....	147,080	23,460	109,380	81,980
Rye, cts.....	54,240	10,560	54,300	21,360
Corn, cts.....	28,780	25,560	112,780	61,280
Beans, sks.....	114,088	308,973	561,262	505,730

FLOUR.

There has been no appreciable improvement in this market, either in prices or general tone. Stocks are fairly liberal, and more buyers than put in an appearance could be readily accommodated. Although there is little likelihood of flour going much lower, most of the purchasing is for immediate use.

Superfine, lower grades.....	\$2 40 @ 2 60
Superfine, good to choice.....	2 65 @ 2 90
Country grades, extras.....	3 00 @ 3 25
Choice and extra choice.....	3 35 @ 3 60
Fancy brands, jobbing.....	3 60 @ 3 75
Oregon, Bakers' extra.....	3 00 @ 3 40
Walla Walla, Bakers' extra.....	3 00 @ 3 40

BARLEY.

While values for this cereal are not quotably lower than a week ago, nor are not likely to drop to much lower levels, the market can not be termed firm. Stocks in State on the 1st inst., according to the Produce Exchange, were 105,400 tons, being the largest amount ever reported at the end of the season, although the quantity stated to be on hand on June 1st, 1899, was about the same, 102,600 tons. A brisk export trade is needed to bring this market into healthy shape.

Feed, No. 1 to choice.....	67 1/4 @ 70
Feed, fair to good.....	62 1/4 @ 65
Brewing, No. 1 to choice.....	75 @ 80
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

The amount reported in the State on 1st inst., 7400 tons, is large as compared with quantities stated to be on hand at corresponding date in previous seasons. Of present supplies, however, only a small proportion is choice white, and market for this sort is firm. Values throughout remain about as last quoted, but for ordinary grades of Whites and Grays the market lacks strength. Black and Red oats rule steady, purchasing on Government account helping greatly to sustain prices for best grades of latter.

White Oats, fancy feed.....	1 22 1/4 @ 1 25
White, good to choice.....	1 12 1/4 @ 1 20
White, poor to fair.....	1 05 @ 1 10
Gray, common to choice.....	1 02 1/4 @ 1 12 1/4
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	95 @ 1 07 1/4
Red.....	95 @ 1 17 1/4

CORN.

Supplies of this cereal, according to the Produce Exchange statement, have seldom been lighter at corresponding date. At the quoted rates, however, which remain practically as last noted, the market does not show firmness, the demand being slow at current rates. Large White is in heaviest supply, and offerings of this variety include considerable which is damp or otherwise faulty.

Large White, good to choice.....	1 10 @ 1 12 1/4
Large Yellow.....	1 15 @ 1 17 1/4
Small Yellow.....	1 40 @ 1 50
Eastern, in bulk (carload lots).....	1 09 @ 1 11

RYE.

Little doing in this cereal and no improvement to record in quotable rates.

Good to choice, new..... 87 1/4 @ 92 1/4

BUCKWHEAT.

With market bare of offerings and none needed at present, values are necessarily nominal.

Good to choice.....	2 00 @ 2 10
Stiverskin.....	— @ —

BEANS.

Business is of light volume, either for shipment or on local account. While there are no radical changes to record in quotable rates, the market presents in the main an easy tone, more especially so for Large Whites or Lady Washingtons, Pinks and Bayos, these constituting the bulk of present supplies. Holders are desirous of reducing stocks and do not hesitate to grant concessions to buyers rather than miss sales, especially where transfers of fair proportions are being effected. Only 114,000 sacks were reported in State on 1st inst., including 76,600 sacks in this center.

Pea, fair to good, 100 lbs.....	3 35 @ 3 50
Small White, good to choice.....	3 30 @ 3 40
Lady Washington.....	2 90 @ 3 05
Butter, small.....	— @ —
Butter, large.....	— @ —
Pinks.....	2 70 @ 2 90
Bayos, good to choice.....	2 85 @ 3 00
Reds.....	3 25 @ 3 75
Red Kidneys.....	— @ —
Limas, good to choice.....	5 25 @ 5 35
Black-eye Beans.....	3 25 @ 3 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

Recent advices by mail from New York give the following review of the bean market, prices quoted being per 60-lb. bushel:

The improvement established in domestic Marrow beans early last week has been fully maintained, but no further advance has occurred. Exporters have drawn some orders and a moderate business has been done, the choicest goods selling at \$2.20 generally. The call for Medium has continued light, and while best marks have been offering at less than \$2.15 they have been difficult to sell at the price. Pea have also ruled quiet but steady on the basis of \$2.27 1/2 @ 2.30 for choice quality. Red Kidney have climbed upward fully 12 1/2c, and close firm with considerable interest manifested. Exporters have taken a number of lots during the week. The first orders were filled at \$2.05, then at \$2.07 1/2, later at \$2.10 @ 2.12 1/2, with a few sales at the close at \$2.15. White Kidney strengthened a little under light offerings. There has been some business in Yellow Eye at \$2.20. Increased weakness in Turtle Soup owing to a total absence of

trade. Lima held steady but working out slowly; quotable at \$3.52 1/2 @ 3.55. It is an unsatisfactory market for the class of foreign beans that comprise the bulk of present holdings. They are mostly of quite inferior to simply fair quality, and these can be bought from \$1.50 to \$1.65. Good to prime grades are steady with a moderate inquiry. Scotch peas dull and in buyers' favor; only small jobbing sales above \$1.15. Green in light receipt and worth about as much as Scotch, but they are not often asked for.

DRIED PEAS.

Same inactivity before noted is still prevailing. Quotations are based on prices realized in latest transfers from jobbers.

Green Peas, California.....	2 20 @ 2 35
Niles Peas.....	2 00 @ 2 25

WOOL.

Local dealers still complain of a dull market, buyers being difficult to find, and that when they do put in an appearance, their ideas of values are as a rule too far below asking rates to admit of transfers being effected. There is little or no disposition shown by holders to come down to the levels that large operators think necessary to warrant them in taking hold freely. Wools are being held back in the interior to an unusual degree, and this is helping to some extent in prolonging the dullness. Some wools are going outward, the last Panama steamer taking 249 bales for New York.

SPRING.

Humboldt and Mendocino.....	18 @ 20
Northern, free.....	15 @ 17
Northern, defective.....	12 @ 14
Middle Counties, free.....	15 @ 17
Middle Counties, defective.....	12 @ 14
Southern Mountain, 12 mos.....	10 @ 12
Southern Mountain, free, 7 mos.....	11 @ 13
Southern Mountain, defective, 7 mos.....	10 @ 12
Oregon Valley, fine.....	19 @ 21
Oregon Valley, coarse to medium.....	18 @ 19
Eastern Oregon, choice.....	16 @ 17
Eastern Oregon, fair to good.....	12 @ 15
Nevada, as to condition.....	15 @ 17

HOPS.

There is little doing in this line in the local market, and not likely to be much change in this regard during the next two or three months, or until new crop hops begin to come upon the market. Present offerings of 1899 hops are mostly under choice, and dealers are not in the market for common grades, having an abundance of this sort on hand. New have been contracted for to arrive, in limited quantity, at 9 @ 10c. for choice.

Good to choice, 1899 crop..... 6 @ 9

The following review of the hop market, furnished by mail of recent date, is from a New York authority:

Until near the close of the week the weather was unusually cool for the season of the year, and its influence on trade has been quite perceptible. Brewers have not felt like buying many hops so long as the demand for malt liquors was so moderate, but there are indications that they will show more interest as soon as warm weather sets in. In anticipation of better business in the near future holders of stocks here take perhaps a little more hopeful view of the situation, particularly for fine goods, and there is a steady to firm feeling as to values. There is no change of moment in quotations, outside figures representing asking rates for best lots, and it is quite doubtful that they can if they can be bought for less. An occasional sale is reported in the interior of this State, one growth in Otsego county realizing 11 1/2c, but the stocks now in first hands are very small, possibly not over 2000 to 2500 bales in New York State, and say 15,000 bales on the Pacific coast, a large part of which are low grade Oregon. It is reported that the growing crop on the coast does not look as well as last year. In New York there is decreased acreage, resulting from some winter killing and plowing up of weak yards, but if proper care is taken in the cultivation, and the season is favorable from now on, there may be nearly as many hops raised as last year.

HAY AND STRAW.

A fair demand is being experienced for old hay, values for which are sustained at about same range current for several weeks past, but market is not firm at these figures. Very little extra selling pressure would send prices to lower levels. New hay is not attracting much attention from either large or small buyers, and is meeting with a decidedly weak market, which is likely to continue to be the case for fully a month or more.

Wheat.....	6 00 @ 7 00
Oat, fair to good.....	4 50 @ 6 00

OLD HAY	
Wheat.....	6 50 @ 9 50
Wheat and Oat.....	6 00 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 00 @ 6 50
Stock.....	5 00 @ 6 00
Compressed.....	6 50 @ 9 50
Straw, 2 bale.....	25 @ 37 1/2

MILLSTUFFS.

There have been no changes worth mentioning since last review in quotable values for millstuffs of any description. There was a generally steady tone, even Rolled Barley showing less tendency to weakness than immediately prior to date of last report.

Bran, 7 ton.....	12 00 @ 13 00
Middlings.....	15 00 @ 18 00
Shorts, Oregon.....	13 00 @ 15 00
Barley, Rolled.....	15 00 @ 15 50
Cornmeal.....	24 50 @ 25 00
Cracked Corn.....	25 00 @ 26 00

SEEDS.

Market is inactive, in a great measure due to absence of noteworthy offerings of seeds of any variety ordinarily quoted in this column. Values below named are based mainly on prices realized in a jobbing way. The Mustard Seed crop is light and will likely not exceed 7000 sacks. It will probably be sixty days before values for new crop Mustard will be determined.

	Per ctt.
Mustard, Trieste.....	— @ —
Mustard, Yellow.....	— @ —
Flax.....	— @ —
	Per lb.
Canary.....	3 1/4 @ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	— @ —

BAGS AND BAGGING.

The Grain Bag market showed steadiness, with considerable business doing at the prevailing rates. For other bags there is little inquiry at present and no changes in prices.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 1/4 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ 6 1/2
State Prison Bags in lots of 2000, 7 1/2 @ 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 32 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 28 1/2
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/4
Fruit Sacks, cotton.....	6 1/4 @ 7 1/4

HIDES, PELTS AND TALLOW.

The same absence of strength and lack of activity previously noted as existing in this department is still being experienced, with poor prospect of there being any change for the better very soon.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10	9
Medium Steers, 48 to 56 lbs.....	9	8
Light Steers, under 48 lbs.....	9	8
Heavy Cow Hides, over 50 lbs.....	9	8
Light Cow Hides, under 50 lbs.....	9	8
Wet Salted Kip.....	9	8
Wet Salted Veal.....	9	8
Wet Salted Calf.....	10	9
Dry Hides.....	17	14
Dry Kip and Veal, 11 to 16 lbs.....	16	12
Dry Calf, under 4 lbs.....	18	15
Salted Horse Hides, large.....	2 50	@ —
Salted Horse Hides medium.....	2 00	@ —
Salted Horse Hides, small.....	1 00	@ —
Dry Horse Hides, large.....	2 00	@ —
Dry Horse Hides, small.....	75	@ 1 00
Dry Colts' Hides.....	50	@ 75
Pelts, long wool, 7 skin.....	1 00	@ 1 25
Pelts, medium, 7 skin.....	70	@ 90
Pelts, short wool, 7 skin.....	35	@ 60
Pelts, shearing, 7 skin.....	20	@ 35
Deer Skins, best summer.....	27½	@ 30
Deer Skins, good medium.....	20	@ 22½
Deer Skins, thin winter.....	—	@ 10
Elk Hides.....	10	@ 12
Tallow, good quality.....	4½	@ 4½
Tallow, No. 2.....	3¾	@ 4
Goat Skins, perfect.....	30	@ 37½
Goat Skins, damaged.....	10	@ 20
Kid Skins.....	5	@ 10

HONEY.

Stocks and offerings are light. Most of the business is of a retail character and on local account, stiffer figures being realized in this way than are quotable. Figures below noted fairly represent wholesale values or prices obtainable from jobbers.

Extracted, White Liquid.....	6 1/2 @ 7 1/4
Extracted, Light Amber.....	6 1/4 @ 6 1/2
Extracted, Amber.....	5 1/4 @ 5 1/2
White Comb, 1 lb frames.....	12 @ 12 1/2
Amber Comb.....	8 @ 10

BEESWAX.

Values are being well maintained, with supplies limited and no lack of demand.

Good to choice, light, 7 lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Beef and Mutton market showed steadiness, and nothing to warrant anticipating any material change in the near future. Hog market was firm and higher.

Beef, first quality, dressed, net 7 lb.....	6 @ 6 1/4
Beef, second quality.....	5 1/2 @ 6
Beef, third quality.....	5 @ 5 1/2
Mutton—ewes, 6 1/2 @ 7c; wethers.....	7 @ 7 1/2
Hogs, bard grain fed, medium.....	5 1/2 @ 6
Hogs, small, fat.....	5 1/2 @ 6
Hogs, large, hard.....	5 1/2 @ 6
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 1/4 @ 5 1/2

Hoge, country dressed.....	6 @ 6 1/2
Veal, small, # lb.....	8 @ 10
Veal, large, # lb.....	7 @ 8 1/2
Lamb, spring, # lb.....	8 @ 8 1/2

POULTRY.

Owing to a surfeit of offerings, largely full-grown chickens from the East and domestic young stock, market showed still more depressed condition than preceding week.

Turkey, dressed, # lb.....	— @ —
Turkey, live hens, # lb.....	12 @ 13
Turkey, live gobblers, # lb.....	10 @ 11
Hens, California, # dozen.....	4 00 @ 5 00
Roosters, old.....	3 50 @ 4 00
Roosters, young (full-grown).....	5 00 @ 6 00
Fryers.....	3 50 @ 4 50
Broilers, large.....	3 50 @ 4 00
Broilers, small.....	2 00 @ 2 50
Ducks, old, # dozen.....	4 00 @ 5 00
Ducks, young, # dozen.....	4 00 @ 5 00
Geese, # pair.....	1 00 @ 1 50
Goslings, # pair.....	1 00 @ 1 50
Pigeons, old, # dozen.....	1 25 @ 1 50
Pigeons, young.....	1 25 @ 1 50

BUTTER.

A further advance was established in prices for fresh product, with market quite firm for choice to select, arrivals of the latter sort showing marked decrease. In packed stock there is not much at present doing.

Creamery, extras, # lb.....	20 @ —
Creamery, firsts.....	19 1/2 @ —
Creamery, seconds.....	19 @ —
Dairy, select.....	19 @ —
Dairy, seconds.....	17 1/2 @ 18
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 15
Creamery in tubs.....	19 @ 21
Pickled Roll.....	18 @ 20
Firkin, California, choice to select.....	19 @ 21
Firkin, common to fair.....	17 @ 18

CHEESE.

Market remains in healthy shape, and is firm at the quotations, with demand good for both large and small sizes. Young Americas are in very light stock and in a retail way are commanding comparatively fancy figures. Favorite brands of flats are going to special custom at an advance on quotations.

California, fancy flat, new.....	9 1/2 @ —
California, good to choice.....	8 1/2 @ 9
California, fair to good.....	8 @ 8 1/2
California Cheddar.....	— @ —
California, "Young Americas".....	9 1/2 @ 10 1/2

EGGS.

Prices have been again marked upward, with prospects of further improvement in the near future for strictly choice to select. Held eggs are in liberal supply, and these, as well as common qualities of fresh, are being offered at generally easy rates.

California, select, large, white and fresh.....	20 @ —
California, select, irregular color & size.....	18 @ 19
California, good to choice store.....	14 @ 16
Eastern, as to section and grading.....	15 @ 17
Eastern, cold storage.....	— @ —

VEGETABLES.

Nearly all descriptions of mid-summer vegetables were in good supply, and a generally easy tone prevailed. Such changes as were made in quotations were almost without exception to lower prices. Onions sold at a decline. Tomatoes were plentiful. Green corn is now selling mostly by the crate or sack, \$1.75 being a quotable extreme on crates, and \$1.25 on sacks.

Asparagus, # box.....	50 @ 1 50
Beane, String, # lb.....	2 1/2 @ 3 1/2
Beans, Wax, # lb.....	2 1/2 @ 4
Cabbage, choice garden, # 100.....	40 @ —
Cauliflower, # dozen.....	50 @ —
Cucumbers, Bay, # box.....	1 25 @ 1 50
Egg Plant, # lb.....	4 @ 6
Garlic, # lb.....	3 1/2 @ 4 1/2
Green Corn, # doz.....	10 @ 20
Onions, Red, Cal., good to choice.....	30 @ 30
Onions, Yellow Danver, # cental.....	80 @ 90
Peas, Sweet, garden, # lb.....	1 1/2 @ 2 1/2
Peas, Green, # sack.....	75 @ 1 25
Peppers, Green Chile, # lb.....	8 @ 10
Peppers, Bell, # lb.....	— @ —
Rhubarb, # box.....	25 @ 75
Squash, Summer, # large box.....	1 00 @ 1 25
Tomatoes, # box.....	50 @ 75
Tomatoes, Bay, # box.....	— @ —

POTATOES.

This market has been weak and slow most of the time since last review. The shipping demand continues insignificant, mainly owing to the plague scare. There was considerable accumulation of stocks, although, with a fair average amount of business, arrivals would not have been excessive.

Burbanks, River, # cental.....	40 @ 80
Burbanks, Bay counties, # cental.....	50 @ 85
Burbanks, Humboldt.....	— @ —
Burbank, Oregon.....	60 @ 90
River Reds.....	— @ —
Early Rose.....	— @ —
Garnet Chile.....	— @ —
New Potatoes, # cental.....	40 @ 75
Sweet, River, # cental.....	— @ —
Sweet, Merced.....	— @ —

The Fruit Market.

FRESH FRUITS.

The display of mid-summer fruits was liberal, especially of Cherries, Plums and Berries, market for these steadily favor-

ing the consumer. Offerings of Plums were decidedly heavy, and did not include many choice to select. Apricots were in increased receipt and lower. Peaches went at lower average rates than preceding week, but this was largely the fault of the quality, which did not average high. Grapes were on market from Arizona in small quantity, mainly Thompson's seedless. Figs arrived, but not in a wholesale way, and sold at decidedly irregular prices. Currants were in rather heavy supply and had to depend largely on canners for an outlet. Gooseberries were scarce and high, particularly the large varieties, and were not quotable in a regular way.

Apples, fancy, 4-tier box.....	— @ —
Apples, good to choice, # 50-lb box.....	50 @ 85
Apples, common to fair, # 50-lb box.....	30 @ 40
Apricots, Royal, # crate.....	40 @ 65
Apricots, Royal, # box.....	35 @ 60
Cherries, Royal Anne, # box.....	35 @ 50
Cherries, Black Tartarian, # box.....	25 @ 40
Cherries, White and Red, # box.....	20 @ 35
Cherries, in bulk, # lb, Royal Anne, 4@5c; Black Tartarian, 2 1/2@4c; Red and White, 2@3c.....	— @ —
Gooseberries, common, # lb.....	— @ —
Gooseberries, English, # lb.....	— @ —
Raspberries, # chest.....	3 00 @ 5 00
Blackberries, # chest.....	3 00 @ 4 50
Logan Berries, # chest.....	3 00 @ 5 00
Plums, # box.....	15 @ 35
Tragedy Prunes, # crate.....	75 @ 90
Currants, Red, # chest.....	2 50 @ 4 00
Peaches, # box.....	35 @ 75
Pears, Madeline, # box.....	15 @ 30
Figs, Black, # double layers.....	1 00 @ 1 50
Figs, single layer box.....	50 @ 75
Strawberries, Longworth, # chest.....	3 50 @ 6 00
Strawberries, Large, # chest.....	3 00 @ 4 00

DRIED FRUITS.

Apricots of the new crop have put in an appearance and are now quotable at 7 1/2 @ 8c spot for good to choice Royals in sacks, these figures being obtainable in the filling of orders for immediate use. For forward deliveries the market is not quotable over 7 @ 7 1/2c for prime to choice Royals in sacks, f. o. b., at common shipping points. There is virtually nothing doing, however, in futures, and operators are talking still lower figures. The influences are naturally bearish at this time of year, and are particularly so the current season, owing to the fruit crop being good in a large portion of this country and also in Europe. Apricots are, however, distinctly a California product, being known as such and having a high standing in all sections of this country as well as in a considerable part of Europe. On the basis of 7 @ 7 1/2c for choice in sacks, delivered at common shipping points, there should be no trouble in disposing of the entire output, even should it prove larger than now generally estimated. Considering the territory to be covered, and the virtual absence of competition, except with other dried fruits in a general way, did the amount of apricots cured this season prove the heaviest on record, it would not necessitate placing very large quantities in any one section if the fruit was properly distributed. Efforts are being made, however, and will continue to be made, to hammer values down to still lower levels. In cured and evaporated fruits of 1899 product there is little doing. The Government is soliciting bids, however, to be opened on the 19th, for considerable quantities of Prunes and Peaches, as well as Apricots, the fruit to be delivered at an early day. The quotable rates for all dried fruits other than Apricots remain unchanged, but there is a weak market for Peaches and sliced Apples, the latter inclining especially against sellers, there being few buyers at any figure. Quartered Apples are scarce. Prunes are ruling quiet, but are being steadily held at the last noted advance, present stocks not being sufficiently heavy to cause holders any uneasiness.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb.....	7 1/2 @ 8
Apricots, Royal, fancy.....	— @ —
Apricots, Moorpark.....	— @ —
Apple, in 50-lb boxes, rings, pressed, fancy.....	5 1/4 @ 5 1/2
Apples, 50-lb boxes, rings, pressed, good to choice.....	4 1/4 @ 5
Figs, White, fancy pressed.....	5 1/2 @ 5 3/4
Peaches, unpeeled, good to choice.....	4 1/2 @ 5
Peaches, unpeeled, fancy.....	6 1/4 @ 7 1/4
Peaches, peeled, in boxes.....	12 @ 15
Pears, unpeeled Bartlett's, halved, fancy.....	9 @ 9 1/2
Pears, halved, unpeeled Bartlett's.....	6 1/2 @ 7 1/4
Pears, quartered, unpeeled Bartlett's.....	6 1/2 @ 7 1/4
Plums, Black, pitted.....	6 1/2 @ 7 1/4
Plums, White and Red.....	7 @ 8
Prunes, in sacks 40-50s.....	4 @ 4 1/4
50-60s.....	3 1/2 @ 3 3/4
60-70s.....	3 1/4 @ 3 1/2
70-80s.....	2 3/4 @ 3

Prunes in boxes, 1/2c higher for 25-lb boxes, 1/4c higher for 50-lb boxes.....	— @ —
4 sizes Santa Claras and equal.....	— @ —
4 sizes San Joaquin and Northern.....	— @ —
Prunes, Silver.....	4 @ 6

COMMON SUN-DRIED.

Apple, sliced.....	3 @ 4
Apple, quartered.....	3 1/2 @ 4 1/2
Figs, Black.....	2 @ 3
Figs, White.....	3 @ 3 1/4
Peaches, unpeeled.....	3 @ 4

Advices by mail of recent date from New York City furnish the following review of the dried fruit market: Evaporated apples have continued quiet

this week. Prices show no material change, but there is some pressure to realize and tone lacks strength. Strictly prime wood-dried are held at 6c in some cases, but it is extreme and 5 1/2c about all that could be depended upon, and demand limited to that basis. Choice and fancy are jobbing moderately in ranges quoted, but fruit under prime receives little attention. Sun-dried sliced apples are dull and weak, with outside quotations generally extreme. Chops and waste quiet, with outside figures only reached in a small way for choice heavy packed. Raspberries weak and some sales reported under quotations. Cherries held firmly under light remaining stocks. California fruit quiet and prices show no material change.

Apricots, Cal., Moorpark, # lb.....	14 @ 16
Apricots, Cal., Royal, # lb.....	12 1/2 @ 13 1/2
Peaches, Cal., peeled, # lb.....	16 @ 20
Peaches, Cal., unpeeled, in bxs, # lb.....	7 @ 8 1/2
Peaches, Cal., unpeeled, in bags, # lb.....	6 @ 8
Prunes, Cal., # lb.....	3 1/2 @ 7

RAISINS.

Former quotations are continued, but they must be regarded as wholly nominal. Business doing is largely by jobbers, and at such irregular and generally low figures that there is absolutely for the time being no correct basis of values. The general desire of the trade is to dispose of holdings as speedily as possible and not carry any old stock into the new season.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, # box.....	1 60 @ —
do do 2-crown, # box.....	1 50 @ —
Valencia Layers, # 20-lb box.....	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6 1/4 @ —
Loose Muscatel, seedless.....	5 @ —
Pacifics.—2-crown loose Muscatel, 5 1/4c; 3-crown, 6c; 4-crown, 6 1/4c; seedless, 4 1/2c.	
Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/2c; 4-crown, 6c.	

(Above prices for loose raisins are for 50-lb boxes.)

Thompson Seedless.—Bleached fancy, # lb, 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, # lb, 8 1/2c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.

Loose Valencia.—Fancy, # lb, 5 1/2c; choice, 4 1/2c; standard, 3 1/2c.

Valencia Clusters.—Fancy, # lb, 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Oranges continue to be offered, although not very freely, still the quantity is larger than there is demand for. Lemon market continues to be burdened with inferior and uncured fruit, for which there is poor custom at low figures. For choice to select Lemons there is a fair market, Limes sold at same rates last quoted.

Oranges—Navel, fancy # box.....	— @ —
Navels, good to choice.....	1 50 @ 2 50
Navels, common to fair.....	1 25 @ 1 50
St. Valentias.....	1 00 @ 3 00
St. Michaels.....	1 00 @ 2 50
Mediterranean Sweet.....	75 @ 2 25
California Seedlings.....	50 @ 1 75
Lemons—California, select, # box.....	2 25 @ 2 50
California, good to choice.....	1 50 @ 2 00
California common to fair.....	75 @ 1 25
Limes—Mexican, # box.....	4 00 @ 4 50
California, small box.....	50 @ 1 00

NUTS.

Spot stocks of Almonds and Walnuts are too insignificant to admit of noteworthy business. New crop and soft-shell Almonds are wanted for future delivery at 9 @ 9 1/2c. Prospects are favorable for a good market. Peanuts are in light stock and steadily held.

California Almonds, shelled.....	14 @ 17
California Almonds, paper shell, # lb.....	10 @ 12
California Almonds, soft shell.....	8 @ 9
California Almonds, hard shell.....	4 @ 5
Walnuts, White, soft shell.....	9 @ 10
Walnuts, White, California, standard.....	7 @ 8
Chestnuts, California Italian.....	8 @ 10
Peanuts, California, fair to prime.....	5 @ 6
Peanute, Eastern, hand-picked.....	6 @ 6 1/2
Pine Nuts.....	5 @ 6

WINE.

The market has developed no new features since last report, continuing quiet at previously quoted range of values, the wholesale rates for dry wines of last year's vintage being 14 @ 16c per gallon. The wine of some cellars is held from 17 @ 20c, but these figures are possible only in a small way and mostly for selections. The Panama steamer sailing on the 9th carried 92,374 gallons wine, including 85,701 gallons for New York.

California Dried Fruit at New York.

New York, June 13. — Evaporated apples, common, 4 1/4 @ 5c; prime wire tray, 5 1/2 @ 6c; choice, 6 1/4 @ 7c; fancy, 7 1/2 @ 8c.

California dried fruits slow at generally unchanged rates.

Prunes, 3 1/2 @ 7c.....	
Apricots, Royal, 12 1/2 @ 14c; Moorpark, 15 @ 18c.....	
Peaches, unpeeled, 6 @ 9c; peeled, 16 @ 20c.....	

ENGLISHMAN, MARRIED, EXPERIENCED and trustworthy, wants charge of orchard or vineyard, or would keep house for bachelor rancher and work on place. Good bookkeeper. References. Address H. R., care this office.

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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/2 sacks.....	168,207	6,167,683
Wheat, centals.....	169,573	6,662,111
Barley, centals.....	29,445	4,989,728
Oats, centals.....	8,340	777,350
Corn, centals.....	6,265	146,196
Rye, centals.....	1,823	101,142
Beans, sacks.....	2,013	364,303
Potatoes, sacks.....	14,384	1,201,540
Onions, sacks.....	1,405	166,663
Hay, tons.....	2,654	149,766
Wool, bales.....	2,222	56,336
Hops, bales.....	186	10,638

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, 1/2 sacks.....	71,376	4,122,442
Wheat, centals.....	298,758	5,984,363
Barley, centals.....	2,079	3,870,207
Oats, centals.....	587	45,701
Corn, centals.....	816	20,609
Beans, sacks.....	273	26,421
Hay, bales.....	1,855	137,786
Wool, pounds.....	4,324,433	1,792,407
Hops, pounds.....	10,699	1,077,706
Honey, cases.....	2	3,582
Potatoes, packages.....	411	72,562

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THE VETERINARIAN.

The Relation of the Cow to the Spread of Tuberculosis.

Not long ago we published an elaborate article on the spread of tuberculosis by the use of milk, in which the writer claimed that wherever dairying was introduced the percentage of human tuberculosis increased—the inference being that milk is the greatest medium for distributing tubercular bacilli. We are glad to see that this view is ably combatted, and it will be interesting to all our dairy readers to have the facts and deductions on the negative. Dr. Edward Moore writes at length on the subject in the *Country Gentleman*, and we shall take therefrom the most significant paragraphs.

TUBERCULOSIS IN OX AND MAN.—One can not recall any notion that has been more dogmatically accepted, taught and adhered to than the belief that tuberculosis of man and of cattle are the same, and that the bacilli of one species can affect the other species, and vice versa. Practically all physicians were taught this, biologists accepted it as fact, veterinarians learned it from the others, and finally laymen were frightened into believing it. In looking through the literature relating to this subject of intercommunicability of tuberculosis between man and cattle, we find very little evidence tending to show that infection passes from man to the ox tribe; at the time most of the experiments were made in this line the experimenters did not know whether the cattle experimented on were free from tuberculosis when the experiments began; healthy looking animals were no doubt selected, but we know to-day that the healthiest looking animals frequently show infection by the tuberculin test, or by post mortem examination. Thus all experiments made before the introduction of the test are comparatively worthless now.

To my mind the strangest thing connected with the general belief in the transmissibility of this disease from ox to man, is the unanimity with which the authorities settle upon the medium of transmission, viz., cow's milk. It may be laid down as a rule, then, according to those who teach transmissibility of infection from one species to the other, that milk is the one great danger; that bacilli from the ox, bull, steer, calf, or even from a cow, so long as they do not reach a person through milk, are harmless. It is true that for a time a number of these teachers held that meat from tuberculous cattle was infective, but they now neglect beef and make milk the sole medium for infection.

IS MILK SO COMMON A MEDIUM?—Let us then consider first the subject of milk infection. It is rare that milk from tuberculous cows contain bacilli. Milk that does not contain bacilli can not produce tuberculosis. Out of thousands of samples of milk from tuberculous cows only a very few have been found to contain bacilli. Yet the majority of such diseased animals give off thousands of bacilli from other organs of the body than the udder. All writers seem to have overlooked this fact. One bovine bacillus is as dangerous as another. Thus one coming from the lungs of a bull is as infectious as one coming from a cow's udder, and it is safe to say that where one tubercle bacillus leaves the body in milk, a million escape through other channels. Scientific men agree that numbers are an important factor in establishing disease; thus in a stable, where from 30 to 100 tuberculous cattle are kept—and there are plenty of herds with such numbers of infected animals in them—there are millions of tubercle bacilli in the air, in the saliva, the voidings, etc.; yet in such a diseased herd we would not expect to find more than one or two cows giving milk, now and then, containing a few tubercle bacilli, and one might examine the milk from many such diseased herds before finding any.

EVIDENCE AGAINST IT.—L. Emmet Holt, M. D., New York, wrote me that he had "personally made or seen about 160 autopsies upon infants or young children dying from tuberculosis of various kinds; of this number only one has shown evidence that the disease began in the intestinal tract. The hospital records of the New York Foundling Asylum have shown in the last fifteen years only two or three cases beginning in the intestines among upward of 200 autopsies upon infants dying with tuberculosis. Our experience has been, there and in other institutions, that the avenue of infection is almost wholly the respiratory tract." George E. Gorham, M. D., of Albany, who was recently appointed manager of the Craig Colony of Epileptics by Governor Roosevelt, wrote me that, personally, he had "never seen a case of tuberculosis in a child which started in the alimentary canal," and he said further that Dr. Henry Hun, than whom we have no more careful observer, made the same statement in a recent meeting of the Albany Medical Society. Dr. Hun told me that "a case of primary tuberculosis of the intestinal tract is certainly an extreme rarity." Milk goes into the intestinal tract, and that is the canal where tuberculosis in children or adults may occur from infected cow's milk, if it is possible for it to occur at all from this source.

CHILDREN NOT INFECTED FROM MILK.—Certain

writers have told us that thousands of cases of human tuberculosis occur every year from drinking infected cow's milk. If these men were better posted as to facts, they would not appear in print with such unsupportable statements. The intestinal tract of the human being is where the "thousands" of cases of tuberculosis must occur, if at all, from cow's milk infection. The figures given from autopsies of children in New York foundling asylums for fifteen years show only two or three cases of disease in the intestines, and no evidence has been given to show that these had anything to do with cow's milk. Dr. Holt in all his life has seen but one case, and that not attributed to cow's milk. If the original lesion is so rare in the alimentary canal of children, and they are "so much more susceptible than adults," we are led to ask how many grown persons who have died of tuberculosis must be examined post mortem ere we find one who received infection through the intestinal tract? If 90 out of 100 who die as children from tuberculosis are infected in other ways than through the intestinal tract, it shows that the inhalation of bacilli is somewhere near ninety-nine times as dangerous as the ingestion of them. Infants whose consumptive mothers are expectorating sputum containing bacilli, are prone to swallow the infective material more or less frequently, and we have shown that it is extremely rare that human bacilli can infect the digestive tract of children; thus it is plain that bovine bacilli, even if they could possibly infect a human being, could do so very rarely indeed when swallowed with milk.

Scientific men tell us about "bottle-fed infants showing higher mortality from tuberculosis, derived from one cow's milk," but "ante-mortem diagnosis of tuberculosis in children has often been defective," says A. K. Chalmers, M. D., of Glasgow. Children may and do die from cow's milk, also from food or water in many cases, in which the disease of tuberculosis plays no part, and physicians should be careful in the future not to attribute such deaths to the bovine bacillus.

Dr. David Bovaird, in the *New York Medical Journal*, July 1, 1899, shows that the primary lesion of tuberculosis in children under five years of age is regularly in the bronchial lymphnodes of the lungs, and makes the inference that the mesenteric glands are infected by the swallowing of tuberculous expectoration, certain to occur in children. In order to accept this view of the etiology of tuberculosis, one must actually reject the infectious power of tuberculous milk and other food; yet it would seem that nothing in scientific research had been more firmly established in the last several years, says W. H. Weaver, M. D., in the *New York Medical Journal*, Oct. 7, 1899.

HUMAN AND BOVINE GERMS NOT IDENTICAL.—At a meeting of the New York Medical Society, Jan. 20, 1900, the question, "How the Milk Supply of New York May be Improved," was discussed. Prof. H. W. Conn, Wesleyan University, Middletown, Conn., said: "From the fact that primary intestinal tuberculosis is rare in man, and because it is probable that the germs producing human and bovine tuberculosis are not identical, there is good reason for believing that the danger of contracting tuberculosis from drinking milk has been greatly exaggerated." Additional facts supporting this contention were the steady decrease of tuberculosis among human beings in all civilized communities at the same time that bovine tuberculosis was on the increase, and the equal decrease of human tuberculosis in countries where milk is taken raw, and in countries where it is commonly sterilized before being consumed. J. George Adami, M. A., M. D., Professor of Pathology in McGill University, Montreal, and Pathologist to the Agricultural Department, Dominion of Canada, in his article on the significance of bovine tuberculosis and its eradication and prevention in Canada, December, 1899, speaking of the false tubercle bacillus, says: "There may be present in the milk a bacillus which microscopically is indistinguishable from the true tubercle bacillus, and which when inoculated into guinea pigs produces a disease and frequently death, with symptoms very similar to those of true tuberculosis; but to animals other than guinea pigs this bacillus is not harmful, and probably it has no effect on man."

CALVES NOT LARGELY TUBERCULOUS.—In former articles I have called attention to the absurdity of arriving at the conclusion that the results of experiments on guinea pigs may be taken as the results that would follow similar experiments made on the human subject, as many experimenters and writers have asked us to believe. Not only in the human being is infection rare in the alimentary canal, but it is also true of the bovine. Furthermore, the milk-drinking period of life in calves is the time of their greatest immunity from tuberculosis. Roeck stated that, from a consideration of 51,000 animals slaughtered in German abattoirs in 1888-89, according to the age of the animals, the infection was found: six weeks to one year, 0.6%; one to three years, 11.4%; three to six years, 33.1%; over six years, 43.4%. These figures fairly correspond with the general postmortem experience. It is well known that tuberculosis is infectious from one bovine to another, and infinitely more so than it is to the human, if at all; and proof that it is at all communicable to the human is wanting. It is therefore axiomatic that large numbers of

children at the bottle-feeding age cannot obtain infection from cow's milk, inasmuch as cow's milk is incapable of infecting in large numbers the young of the species from which the milk is obtained. The figures given above are less than 1% in calves up to one year old. Again, we have over 43% in cattle over six years. Cattle do not obtain infection through milk because they do not have it. Calves have a milk diet, as a rule, and as a rule are free from tuberculosis.

POINTS OF DIFFERENCE.—These facts illustrate a difference between human and bovine tuberculosis, and there are others not noticed by any writer to my knowledge. In the bovine we find the disease most common in the mature milking cow. It finds no parallel in the human mothers. In the human males it is a common disease; it is comparatively rare in bovine males. In the human being the disease is thought to be more widespread among children than adults by many physicians. In the bovine we know it is rare in the period corresponding to childhood. Is it rational to believe that tuberculosis of the human and of the bovine are identical? G. F. Still, in the *British Medical Journal*, considers 269 consecutive necropsies on children under twelve years of age, and 117 or 43% occurred at the milk-drinking period of life, viz., under two or three years of age, which corresponds with the two or three months' period of calfhood. I have shown in other articles that people exposed to bovine infection by inhalation are proverbially free from tuberculosis. The argument that the co-existence of the disease in man and cattle tends to prove transmission, is exploded by the knowledge that the bacilli of either species do not require an intermediary bearer, and I have given other reasons equally forceful. Albert S. Ashmead, M. D., formerly director of the Tokio Hospital, Japan, has advised me that in Japan, where but few animals of any sort are kept, the few cattle are herded together in the interior; they are not, as in America, scattered about the country. The better class of people do not use animal products, and are not in any way brought in contact with cattle or beef or milk; yet this class suffer terribly from tuberculosis, while the mountaineers who have the most intimate relations with the isolated Japanese cattle are practically free from tuberculosis.

EXAGGERATIONS.—Physicians and biologists of unquestioned ability have freely admitted that much exaggeration has followed the teachings of Koch, Nocard and others as to the transmissibility of tuberculosis from the bovine to the human being. The professors who twenty or thirty years ago taught that tuberculosis was commonly conveyed from man to cattle, gave us evidence to prove it not so strong as the uncertain light which the tallow dip furnished, and those who are still preaching that theory give us no evidence at all of their own. They proudly tell us that professors so and so said that they had the best evidence in the world. We turn the modern searchlight of investigation upon them and they are bewildered. We show the defects of their evidence everywhere, and, as the strong light strikes their faces, they cover their eyes with their hands and exclaim: "Koch proved it; so did Cruikshank, Pasteur, Sternberg and Martin, even though we have not been able to verify it." If men could prove it in a few cases twenty years ago, investigators with enhanced facilities could have proved it in hundreds of cases in the past year. The best opportunity possible was offered to many who believed the old theory when they were summoned before the Assembly Investigating Committee last year. Did they prove it? Not in a single instance. Did they desire to? Oh, yes; and some of them have tried to ever since, and are likely to die trying. So much for a universal belief.

THE water level in a boiler may be judged from the mean of the water surge in the water gauge. If gauge cocks only are used, the approximate water level may be judged from the manner of opening the gauge cocks. By slightly opening the gauge cocks one after the other, one may obtain clear steam from the upper gauge, a drizzle of water and steam from the middle gauge and more solid water from the lower gauge, when the mean height is between the middle and lower gauge, with variations suitable to high or low water. A boiler may foam from excessive use of steam or from foul water, or want of cleaning. An engineer should always be able to judge whether the boiler is too small for its work or whether dirty water and want of cleaning is the cause of foaming.

TO FIND the horse power necessary to elevate water to a given height, multiply the number of gallons per minute by 8.35, weight of one gallon, and this result by total number of feet the water is to be raised (that is, from surface of the water to the highest point to which the water is raised), and you have the power in foot pounds. Divide by 33,000 and you have the horse power. One horse power is equal to about five men. To the theoretical power a liberal allowance for friction, etc., should always be added.

TO FIND the pressure in pounds per square inch of a column of water, multiply the height of the column in feet by .434. Approximately, every foot elevation is equal to one-half pound pressure per square inch. This allows for ordinary friction.

IF the matter in the earth's crust be represented by 1000, oxygen would equal 480 parts thereof, silicon 200, aluminum 80, iron 60, calcium 30, magnesium 20, sodium 20, potassium 15, hydrogen 2, other elements 3.

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FRUIT PRESERVATION.

Curing Prunes.

By GEORGE A. FLEMING in Tulare Times.

The business of curing and packing prunes gives employment to large numbers of men, women and children for several months in each year.

About the last of August the prunes take on a dark purple hue, are full grown and full of sugar, and begin to drop to the ground. Now the prune harvest begins. It is near the end of the long summer vacation, and the boys and girls, eager to make money, gather at six in the morning at the various orchards near town. On foot, horseback, bicycles and in carts they come. Help is scarce and in demand, and some enterprising orchardists run accommodation wagons from town bringing a merry crowd. All have an object in view; a bicycle, a new dress, school outfits, a savings bank account, are the usual incentives and each day's work brings them nearer to its accomplishment, to say nothing of lessons in thrift and industry.

PICKING.—Men are employed to slightly shake the trees, causing the ripest and sweetest prunes to drop; following them come the army of boys and girls, filling tin pails, which are emptied into boxes scattered here and there. Each box filled means 5 cents earned, and the eager pickers darting here and there remind one of boyhood days, when we gathered chestnuts in the brown woods "back East."

Prune picking is especially a boy's work, and an active boy of ten to twelve years will often earn \$2 a day.

DRYING.—While this is going on in the orchard there is another busy scene at the drying ground. As wagon loads of prunes are hauled in they are quickly run through the dipper, spread on light wooden trays, and laid out in the sun to cure. This dipping process consists of slightly scalding in weak lye, then a thorough rinsing in clear cold water. Its object is to assist the drying process, as well as to cleanse the fruit. Large machines operated by steam are used for this purpose, and often 100 tons a day are handled. It takes about a week of sunny weather to cure the prunes, and as fast as ready they go into large bins, where they lie for a week or two, to sweat, and then are ready to be hauled to the packing house.

PACKING.—These packing houses are operated by large dealers in prunes, and there are four of them in Visalia. Here the prunes are graded and put into shape for the grocerymen, and shipped to them all over the world. The orchardist's work usually ends at the packing house door, he sells his prunes in bulk, and gets payment in cash. A good crop nets him from \$100 to \$200 per acre. Prunes are graded into several sizes and are marked according to the number of prunes in a pound, thus, the size known as 40 to 50, are so named because it takes from 40 to 50 to make one pound of this grade. The largest size is 30 to 40 and grades

sometimes run as small as 140 to 150. The grades smaller than 100 are not desirable; the grower would never think of using them himself, and cannot understand why there is a demand for them. Their cheapness makes them sell readily, however.

The packing house work has to be done rapidly, and machines of large capacity are kept running, grading the prunes as fast as they are brought to the door. As soon as a load is graded, samples from each size are carefully weighed and counted, and a receipt given, the grower being paid according to the size of the prunes delivered.

Before being packed in boxes prunes are again scalded, so as to thoroughly clean and brighten them, and they are pressed while hot into boxes, and nailed up for shipment.

Packages holding 25, 50 and 80 pounds are used, the former being "faced," and are the favorite size. This "facing" is done by girls. The boxes are neatly lined with white paper and a layer of flattened prunes arranged in regular rows in the bottom of the open box. These boxes are then filled and pressed, the layered or faced surface is the side opened by the dealer, and presents an attractive appearance. While every effort is made to catch the eye of the buyer, yet every reputable packer guarantees that the prunes are of the same size and quality in all parts of the box.

Each packing house employs from thirty to forty girls, and fifteen to twenty men. They are in active operation for from three to four months, during which time they often run night and day. Later in the season their work is irregular, but the packing season usually lasts from August till April.

A BUSY SCENE.—To fully appreciate this great California industry, the reader should see it in full swing. The smoking chimneys of drying yards and packing houses, the army of employees gathering for the day's labor, the long lines of wagons waiting to be unloaded, all speak for themselves, showing that the curing and packing of California's prune crop of 125,000,000 pounds is a work of great importance in the industrial and business world.



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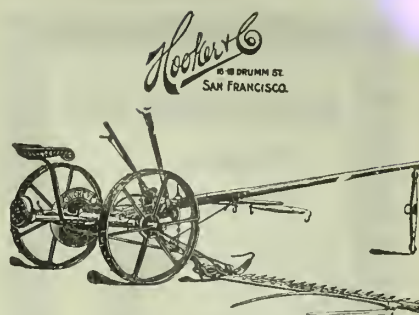
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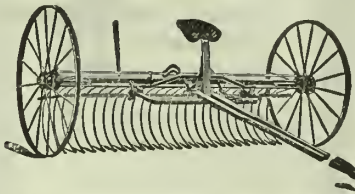
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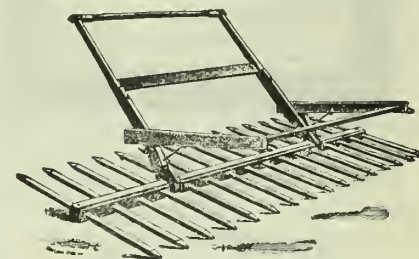
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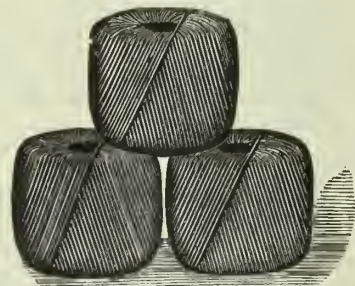
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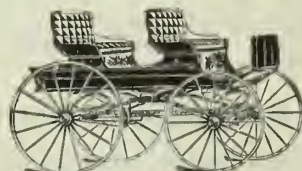
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Patrons of Husbandry.

Co-operation.

TO THE EDITOR:—I have noticed lately several articles in the PACIFIC RURAL PRESS in the interest of co-operation, especially among fruit growers, one article of which was headed "Keep the Farmer on the Farm," which includes all who till the soil. So, as the air is filled with the co-operative spirit, the time is near at hand when we will have to put such a system into practical operation, for until all co-operate how can the farmer be kept on the farm? This is the question, and a question worthy of consideration, for the world well knows that the farmer is the life, if not the light, of the world.

Where would this nation be to-day if it were not for the farmer? So we maintain our farms and the farmers with them. How can this be done unless the bankers come to our assistance and take stock to the amount of our indebtedness in some movement wherein we are all benefited, instead of maintaining us to still be bled in the interest of corporations? Let all take some responsibility and help maintain the soil that feeds us. Ours is a productive country and worthy of development, but only by co-operation can this be effected, and by the united effort of both the rich and the poor, or capital and labor.

SAMUEL M. COPPIN.

Pleasant Grove.

Eden and Temescal Granges.

TO THE EDITOR:—Oakland Grange celebrated its annual picnic with Eden Grange on June 9th at Mr. J. M. Moore's home near Fitchburg. Not being able to have it at Mr. Renwick's, as heretofore, we did the next best thing and went only a block or so from our old camping ground. Although we were not as many in numbers as was expected, we congratulated ourselves that what we lacked in quantity we made up in quality.

Our Grange contemplates a series of entertainments to raise extra money to buy new badges and to be able to move to a hall containing a piano. A.

Healdsburg and Geyserville Granges.

Healdsburg and Geyserville Granges held a picnic on Children's Day, June 2nd, which was set aside by the National Grange. It is estimated that between 800 and 1000 people enjoyed the day at the beautiful spot selected. The exercises began at about 10:30 A. M., with W. V. Griffith of Geyserville Grange as master of ceremonies. The various schools took part. Rev. W. C. Driver delivered a short but interesting address. After the programme was rendered the people selected suitable spots and enjoyed their lunches.

About 2 o'clock races and sports were the order, for which prizes were awarded. The refreshment stand did a splendid business and a balance of \$20 remained after paying all expenses of the picnic.

San Jose Grange.

At San Jose Grange, June 9, four new members were initiated—Mr. and Mrs. J. O. Cook, Catherine Cook and F. H. Babb.

Next Saturday there will be no meeting of the Grange, as it will unite with the Los Gatos Grange in a picnic on the ranch of Frank Baker, above Los Gatos.

It was stated that the first Grange that was instituted in the State, at Pilot Hill, in El Dorado county, and which has been inactive for ten years, has shown a desire to resume the work, and the services of State Master Worthen have been called for to aid in this design.

Oregon State Grange.

At the Oregon State Grange meeting at Independence the following officers were elected after a very spirited contest: Master, B. G. Leedy; Overseer, Mary H. Whitbey; Lecturer, Austiu T. Buxton; Steward, H. B. Chapman; Assistant Steward, C. L. Shaw; Chaplain, O. Eaton; Treasurer, H. Hirshberg; Secretary, Mary S. Howard; Gate Keeper, H. T. Wheeler; Pomona, E. A. Neiblin; Flora, Clara E. Swank; Ceres, N. E. Olm; Lady Assistant Steward, A. E. Tilton; Executive Committee, J. E. Clem; Legislative Committee, J. Voorhees, W. M. Hilteary.

THE farmer boy may not wear as good clothes and put on as much style as the city boy, but if he buckles down to hard work he will at the end of ten years be able to buy and sell the other. Don't get discouraged and dissatisfied with the farm, boys; it's the place where happiness, prosperity and independence are to be gained.

THE Roseville Grange gave a feast June 2 at their hall. They also initiated some new members and gave a dance in the evening, which was well attended.

There is more Catarrh in this section of the country than all other diseases put together, and until the last few years was supposed to be incurable. For a great many years doctors pronounced it a local disease, and prescribed local remedies, and by constantly failing to cure with local treatment, pronounced it incurable. Science has proven Catarrh to be a constitutional disease, and therefore requires constitutional treatment. Hall's Catarrh Cure, manufactured by F. J. Cheney & Co., Toledo, O., is the only constitutional cure on the market. It is taken internally in doses from 10 drops to a teaspoonful. It acts directly on the blood and mucous surfaces of the system. They offer one hundred dollars for any case it fails to cure. Send for circulars and testimonials. Address F. J. CHENEY & CO., Toledo, O.

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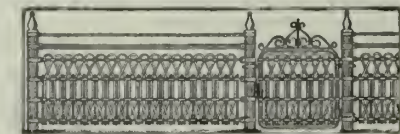
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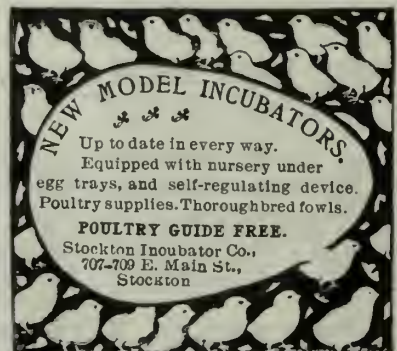
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FRUIT MARKETING.**Orange Selling at Redlands.**

The ninth annual statement of the Redlands Orange Growers' Association has been issued by A. B. Ruggles, secretary and manager. It shows that the business of the association for the past season was the largest transacted during any similar period since the formation of the organization, nine years ago.

The cost of packing and handling, including brokerages, cash discounts and every other expense connected with the business, was 35.6 cents per box, or 2.4 cents per box less than the previous season.

The total receipts were \$49,371 in excess of last season. The business of the season, aggregating \$206,347.79, was conducted without the loss of a single dollar, as all accounts have been paid in full.

Total number of pounds of oranges received, 8,450,073; boxes shipped, 119,700; cars shipped, 331. Percentage of fancy Navels, 79.4; choice, 16.4; culls (including 300s and smaller), 8.7. Average price realized for all Navels received, including worthless culls, \$1.995 per 100 pounds.

The Valencias and Crafton Lates will be marketed later and will be embraced in a supplemental report.

The prices realized for the different varieties and grades were as follows:

Navels (net value per 100 pounds): Fancy, regular sizes, \$2.488; fancy, off sizes, \$1.86; choice, regular sizes, \$1.89; choice, off sizes, \$1.52; culls (including 300s and smaller, 72 cents.

Mediterranean Sweets: Fancy, \$2.18; choice, \$1.367; culls, \$1.10.

Seedlings: Fancy, \$1.41; choice and culls, 77 cents.

Ruby Bloods: Fancy, \$2.288; choice and culls, \$1.74.

Malta Bloods: Fancy, \$2.237; choice and culls, \$2.02.

St. Michaels: Fancy, \$2.10; choice and culls, 77 cents; grape fruit, \$1.36.

Of the 8,450,073 pounds of oranges shipped, 7,031,098 pounds, or over 83%, were Navels and 1,418,975 pounds were of all other varieties.

Shortage of Orange Crop in Valencia.

H. L. Washington, U. S. Consul at Valencia, writes to the State Department as follows: A shortage in the orange crop of Valencia this year, and the certainty, since the frosts of early March in this district, of a still shorter crop next year, offers an opportunity for our producers to take advantage of the demand and of the greatly increased price in England and Germany. The total export of oranges from this district last season amounted to 4,000,000 cases (average of 556 oranges in case, weighing about 150 pounds net). Shipments to date this year have reached 2,600,000 cases, and are estimated at 3,000,000 cases for the entire season, which is not expected to last more than another month. A number of the oranges remaining have been secured by speculators to forward overland to Paris, where high prices are expected during the exposition.

The visible scarcity has already produced an advance in prices all round. A good case of oranges can not be obtained here at present under 24 pesetas (\$3.43) free on board, while prices in England, which last season averaged 10s. to 12s. (\$2.44 to \$2.92) have now ad-

vanced to 15s. to 18s. (\$3.65 to \$4.38) a case, and will undoubtedly be very much higher.

I would also point out to our exporters who wish to compete with Valencia shippers of oranges that the Valencia orange case of to-day is not the slovenly got-up package it used to be, but a work of art, skilled labor having been employed in the selection and packing of the fruit.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING MAY 29, 1900.

- 650,502.—STEEL WATER GATE—J. Bouse, S. F.
650,638.—WHEEL HUB—G. M. Dixon, Sacramento, Cal.
650,673.—ORE CONCENTRATOR—W. G. Dodd, S. F.
650,753.—WASHER—A. B. Gibson, Polk county, Or.
650,754.—ENVELOPE—C. A. Gruenhagen, Creston, Cal.
650,584.—WINDOW SHADE HOLDER—T. Harding, San Jose, Cal.
650,536.—MANNITE SUBSTITUTE—A. Hough, S. F.
650,509.—PUMPING ENGINE—H. Kessler, S. F.
650,606.—SHAFT COUPLING—I. La-Grange, Los Angeles, Cal.
650,794.—ADVERTISING DEVICE—G. W. Maxwell, Los Angeles, Cal.
650,563.—WATER FILTER—I. E. Morris, Oakland, Cal.
650,415.—VEHICLE HUB—P. B. Page, Fresno, Cal.
650,567.—CHECK HOOK—O. I. Roberts, Tomales, Cal.
650,590.—CABLE GRIP—A. Rosenholz, S. F.
650,732.—PICTURE CABINET—L. S. Sanborn, Davenport, Wash.
650,521.—SASH LOCK—Shaw & Spaulding, S. F.
650,571.—GAS ENGINE—H. Swain, S. F.
650,626.—SAWMILL SET WORKS—Wood & Lachapelle, Houquiam, Wash.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

APPARATUS FOR REMOVING SURPLUS METAL FROM COATED ARTICLES.—George Porter, San Francisco, Cal. No. 650,114. Dated May 27, 1900. This invention relates to an apparatus which is designed for the cleansing and preparation of nails which have been previously coated with molten zinc or equivalent protecting metal and which process is technically called "galvanizing." The object of the invention is to provide a mechanism and apparatus by which the surplus fused metal adhering to the nails can be cleaned off and the nails left in a smooth and merchantable condition. It comprises a cooling chamber with beaters, an inclined revoluble spirally ribbed cylinder and a directing board by which the articles are delivered from the first chamber to the cylinder, a shaking separating screen upon which the articles and separated particles are received, a collecting floor and discharge for the metal beneath the screen, a second screen upon which the nails are delivered, and an air blast and spraying device for cooling them as they pass over the second screen to the point of delivery.

DRYING APPARATUS.—C. R. Splivalo, San Francisco, Cal. No. 649,648. Dated May 15, 1900. This invention is designed for purposes of drying alimentary pastes, such as macaroni, vermicelli and the like. It consists of a vertically journaled and stepped center post, bars secured across the post at top and bottom and at right angles with each other, exterior frames fixed to the ends of the bars united at the corners to form rectangles, with vertical connecting bars, horizontal supporting bars secured thereto and trays adapted to contain the material to be dried, said trays being supported upon the horizontal bars and having their inner and overlapping spaced bars at the center of the structure which support these overlapping ends. Suitable mechanism is provided by which the structure is revolved upon its vertical axis so that the trays are constantly moved through the air in horizontal planes, and this continually furnishes sufficient dry air to take up the moisture and carry it outward away from the trays.

Nitrate of Soda as a Fertilizer.

Trade-Marks



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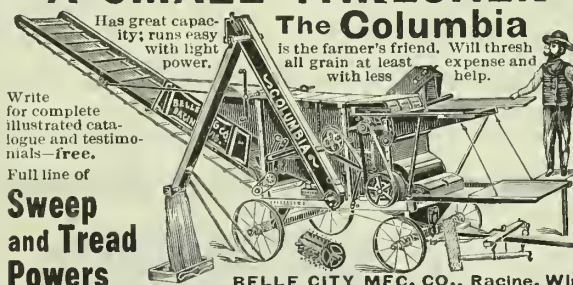
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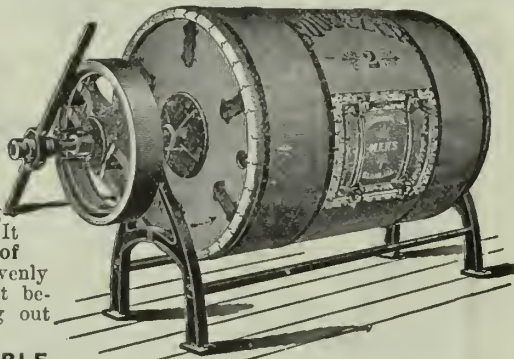
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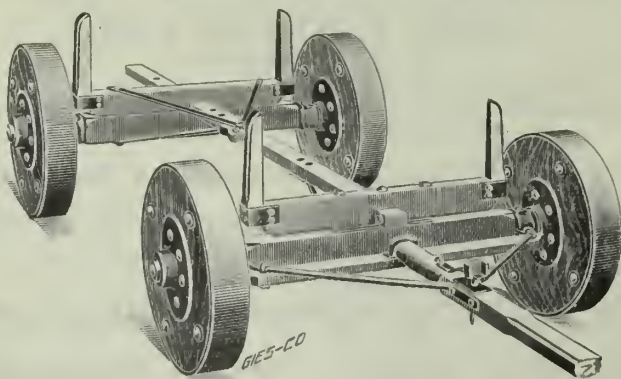
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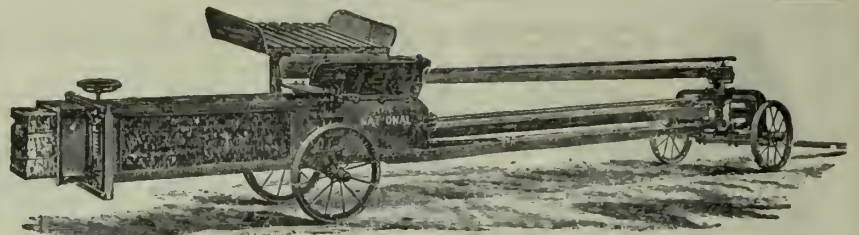
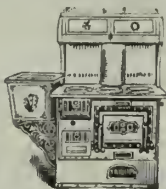
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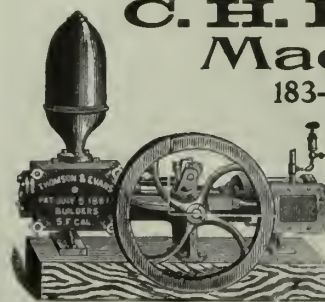
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LIX. No. 25.

SAN FRANCISCO, SATURDAY, JUNE 23, 1900.

TWENTY-NINTH YEAR.
Office, 330 Market St.

Alkali Lands and Their Treatment.

Through the studies of Prof. E. W. Hilgard of the University and the investigations and experiments made under his direction by a staff of field and laboratory assistants, California leads the world in the understanding of the nature of alkali lands, their value and utilization. This California work has brought experts from nearly all governments having arid possessions to this State to personally observe occurrences and methods at the California experiment stations, and the published accounts have inspired investigators everywhere to similar studies. There is every inducement to this course, not only for its attractions as a new line of scientific inquiry, but because of its great economic importance. It is not merely a question of making waste lands tributary to

nature. Marsh lands derive their salts from sea water that occasionally overflows them, and the salts which impregnate them are essentially "sea salts," very little of which would be useful to vegetation or desirable as a fertilizer. Alkali lands bear no definite relation to the sea. Their existence is usually definitely traceable to climatic conditions alone. They are the natural result of a light rainfall, insufficient to leach out of the land the salts that always form in it by the progressive weathering of the rock powder of which all soils largely consist. Where the rainfall is abundant, that portion of the salts corresponding to "sea salts" is leached out into the bottom water, and with this passes through springs and rivulets into the country drainage, to be finally carried to the ocean. Another portion of the salts formed by weathering, however, is partially or wholly retained by the soil; it is that portion chiefly useful as plant food. It follows that when, in consequence of insufficient rainfall, all or most of the salts are retained in the soil, they will contain not only the ingredients of sea water, but also those useful to plants. In rainy climates a large portion even of the latter is leached out and carried away. In extremely arid climates their entire mass remains in the soils; and, being largely soluble in water, evaporation during the dry season brings them

to the surface, where they may accumulate to such an extent as to render the growth of ordinary useful vegetation impossible, as is seen in "alkali spots," and sometimes in extensive tracts of "alkali desert."

Alkali deserts have characters which invariably impress themselves upon the traveler and no picture



Alkali Spots Before Reclamation; Tulare Experiment Substation.

can do justice to them. Fortunately California's alkali lies chiefly in spots rather than deserts, and though these are hateful enough they are not hopeless as a desert, and they are more easily represented to the reader. The engravings on this page show characteristic appearances. The smallest picture is from a photograph taken at the station in the San Joaquin valley which Prof. Hilgard established chiefly with a view of studying the occurrence of alkali and the feasibility of corrective measures. It shows part of a tract of productive land with an outcropping of alkali so strong that even wild vegetation cannot endure it, except, perhaps, for a short time in the rainy season. The largest picture shows a pasture field largely alkali and stock which find in the vegetation which partly covers it a scant subsistence.

The sight of these blemished fields suggests the possibility of remedial treatment and in this direction Prof. Hilgard's bulletin is replete. The casual reader will be interested to know that the central picture shows a good stand of grain upon what was once an alkali spot of the rankest type, and the two smaller engravings show the contrast—before and after taking Hilgard's alkali annihilator, as it might be called, if any one had proprietary rights in it. The fact, however, that powdered gypsum will transform the blackest alkali into other substance which the plant will tolerate, was given to the public many years ago as a return for the public money which made the investigation possible.



Wheat Upon What Was Originally a Barren Black Alkali Spot.

human support and removing blemishes from the agricultural landscape, but it is now a fully demonstrated fact that many lands now waste are not in such condition because of their poverty, but rather because of their excessive richness in plant food, and to overcome this is to add to the world's productive area lands which may not need fertilization for a century. It is little wonder, then, that Prof. Hilgard's discoveries have furnished a motive along many economic and scientific lines of world-wide moment.

We are tempted to these comments by the publication of a bulletin by the Experiment Station of the University of California which brings up to date the conclusions of the various studies which we have hinted at and presents them in a style to meet popular leisure and comprehension. Earlier and more elaborate publications had passed out of print and were no longer available. It seemed to be a fitting occasion to present a summary in plain terms of results formerly demonstrated with much detail, and such can now be had by application to the University at Berkeley. The more casual reader who perhaps has no alkali land to induce him to undertake even such condensed statement, we have thought to serve by pointing out a few striking facts, pictorially and otherwise, in the alkali line.

Prof. Hilgard points out the fact that alkali lands must be pointedly distinguished from the salty lands of sea margins or marshes, from which they differ in both their origin and essential



A Characteristic View of Alkali Lands in San Joaquin Valley, California.

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E. J. WICKSON..... Horticultural Editor.

San Francisco, June 23, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Alkali Spots Before Reclamation, Tulare Experiment Substation; Wheat Upon What Was Originally a Barren Black Alkali Spot; A Characteristic View of Alkali Lands in San Joaquin Valley, Cal., 385.
EDITORIAL.—Alkali Lands and Their Treatment, 385. The Week; The Prune Growers Cross the Rubicon; Miscellaneous, 385.
QUERIES AND REPLIES.—Malaria and Winter Apples; Not the Dried Fruit Moth; Fruit Injured by Hailstones; Scabs, Shot Holes and Bug Bites; Blenheim and Royal; Killing Fleas in Out-buildings, 387.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending June 18, 1900, 387.
HORTICULTURE.—Present Status of the Fig Insect; Lupins and Vetches for Winter Growth in Orchards, 388.
SHEEP AND WOOL.—Sheep on Farms in Western Oregon, 388.
THE FIELD.—Hop Growing in California, 389.
ENTOMOLOGICAL.—Treatment for the Canker Worm; A New Black Scale Destroyer, 390.
THE IRRIGATOR.—The Miners' Inch and Its Equivalent in Other Units, 390.
AGRICULTURAL REVIEW.—391.
THE HOME CIRCLE.—Nighttime in California; Unconventional Courtship; Blood Poisoning; Love's Passage; The Squire's Hobby, 392. The Care of Kid Gloves, 393.
DOMESTIC ECONOMY.—Things to Know; Breakfasts; Strawberry Desserts; Hints to Housekeepers, 393.
THE MARKETS.—Produce Market; Fruit Markets, 394-395.
THE VETERINARIAN.—The Fatal Effect of Green Sorghum; Answers by Dr. Creely—What Not to Do for a Cow; Swine Plague; A Case of Tuberculosis; For a Hard Swelling; Periodic Ophthalmia, 396.
PATRONS OF HUSBANDRY.—Tulare Grange Meeting; Elk Grove Grange, 398.
MISCELLANEOUS.—Uncle Sam's Pocketbook, 387. Several Kinds of Farmers, 397. A Decision on Irrigation Districts; List of U. S. Patents for Pacific Coast Inventors; Notices of Recent Patents, 399.

The Week.

The exciting theme of the week has been the plague quarantine which an official placed upon San Francisco, and which endured a day before the Washington authorities could pull it down in response to the indignant protest of Californians. It was a narrow escape for our fruit crop. Those who suffered during the railway strike of 1894 have not yet forgotten what it means to arrest the proper movement of our fruit crops, and this plague excitement seemed likely to effectually stop the traffic. Fortunately it is apparently all over now, and it has been shown by decision of the United States courts that no occasion for quarantine has existed here. The officious person who did it is himself in the possession of the courts on a charge of contempt, and he may go to the lockup. But incarceration is too light an affliction for such an offender; he ought to be ignominiously cast out of the State. If the fruit growers had him he would be persistently pelted with putrescent pears to the State line.

The raisin growers have made rapid progress in increasing their acreage during the week. The retirement of Mr. Kearney was followed by the signing of a number who opposed him. The work will proceed until July 3, which is the date set for closing the propaganda.

There has been quite a rush in wheat, and as we go to press the speculative market is strong and advancing. Spot wheat does not respond to the activity in futures, and yet one could not buy wheat for less than 50 cents to \$1 above rates which prevailed a week ago. Little is selling, and yet some exports are going out each day either to Pacific ports or to Europe. Barley is as last week: receipts heavy and trade slow. White corn has been selling better for mixing with yellow, which is still high. Hay looks slightly better; old is firmer and choice new has a fair outlook; little is arriving just now. Bran is a little firmer. Meats are unchanged; Eastern hogs are still a chief element in the supply and the outlook is held to be good. Butter and eggs are a little easier, as supplies are liberal and demand slack, owing to the vacation season. Cheese is unchanged, but less active. Wisconsin cheese is now competing with the farther East for the demand of those who want nothing but Eastern. Poultry is slow and weak, except for choice. Potatoes are looking up a little, while onions are unchanged. Beans are quiet. Honey is selling well for local trade. Wool is awaiting for political matters to assume more definite form.

The Prune Growers Cross the Rubicon.

The California Cured Fruit Association, which is the company name of the prune growers' organization, will proceed with the marketing undertaking which has been the subject of such anxious effort for the last six months. Our readers remember, of course, how effort after effort had to be made to line up the producers and how the time for the final decision to go forward or to retreat was repeatedly postponed to allow the slowest thinker to reach a conclusion. The last date of all, June 15, duly came, and before the close of the day the resolution to advance was reached by the directors.

The affair in its last stages disclosed dramatic features which are interesting in themselves and significant in showing the strong hold which self-helping co-operative efforts are taking upon the thoughts and the emotions of producers. Upon Monday last, the day fixed as the ultimate limit of probation, the directors of the association were in session in San Jose endeavoring to determine their standing with reference to control of the prune product. They were generally known to be at this task and in anxiety to hear at the first moment the decision of the directors the prune growers of the region came together in a public hall. As the hours lengthened the growers became more anxious lest the directors should become faint at heart and they naturally fell into a demonstration of their conviction that there should be no hesitation. Eloquent hortatory speeches were made and finally so great earnestness demanded unusual exposition. It was quickly decided to proceed in a body to the directors' meeting and urge them not to hesitate longer. The next step was to summon a brass band and banners and in a few minutes the whole assembly of growers was on the street in parade lines. The Mercury says:

The parade formed four abreast in front of the hall, many ladies joining in the ranks. The line of march was then taken up to the Board of Trade rooms, where the directors were in session, the brass band and transparency in the lead. The big and unexpected demonstration aroused much interest and surprise among the spectators along the line of march. Over a thousand growers and business men joined in the parade. There was much cheering along the line of march from sympathizers of the movement among the crowds on the streets. The brass band played lively march airs that added to the enthusiasm of the demonstration.

This short sketch will suggest the scene when the directors were summoned to the presence of the multitude and replied to the urgent exhortations which were given them. Such manifestations could not be disregarded. The decision to proceed with the work planned for the organization was finally reached. It could not be withheld. The trouble has been all these years that sufficient warmth and enthusiasm could not be summoned in co-operative enterprises. A change has come: the prune growers have demonstrated that enthusiasm can be mustered and that fruit growers can be in earnest.

Though the directors were, of course, strengthened by the action of the growers and given new courage, they proceeded cautiously in making up their final decision and did not reach it until late in the night of the day which they had set as the last of the probationary period. The Mercury says by a unanimous vote that was as hearty as any action that was taken at the big growers' meeting, the board made the decision to handle this year's prune crop, that is expected to be one of the heaviest that has ever been handled in California. The directors stated that by as close an estimate as they were able to obtain in their various districts they found that they had in excess of 90% of the bearing prune acreage in Santa Clara county and over 80% of the entire acreage of the State. The formal resolution declaring the purpose to proceed with the organization was not drawn up, it being the purpose to prepare the document very carefully, as its contents will be of great importance in the future of the movement.

And so it goes upon record that the prune programme will proceed. The packers committee has agreed to the decision of the growers, and the packers will now form a permanent organization to work under the new arrangement. Now that the effort has been decided upon, there will be a renewed effort to secure the consent of growers still outside. The canvass for contracts will also proceed as rapidly as

possible in all sections of the State, it being expected that many more growers will come in, now that the association is an assured fact.

A most exasperating report comes from the Paris Exposition to the effect that the jury on wines has decided not to judge any foreign wine which bears the name of any French wine. Most American wines have the general names of French wines, which they resemble, such as Sauterne, Chablis, Bordeaux, Chateau, etc. These will be excluded under the action of the jury, half the membership of which are Frenchmen. The wines now excluded were judged at the Exposition of 1899 under the names they now bear. Besides, the American wines were catalogued under their present names, and there has been no protest until now. It seems very stupid in the French to object to their wines being made types according to which the wines of the world are classified. It really does not matter much, however, whether they object or not, nothing can prevent the use of terms which are so widely understood as no longer of national but of world-wide significance. It is stated that the California Commission, who hoped to secure recognition for their wines, are incensed and threaten to withdraw all their exhibits. We hope this is not true. It would be just as foolish on our part as the French are on theirs. Let the wine be judged: call it buttermilk if they like: the world is not deceived. The French are in their own light.

PROF. E. R. LAKE of the Oregon Agricultural College has received notice from the U. S. Department of Agriculture of his appointment as a special agent to investigate the prune business in Europe, with a view to ascertaining whether a variety can be found which is earlier and a more reliable bearer than the Italian and equal to it as a market prune. The Rural Northwest says he will also look up the methods of curing and packing prunes and ascertain how prunes should be prepared and packed in order to meet the demand in England and other European countries. This investigation may yield suggestive points as to the styles which will best suit European buyers; but we apprehend that he will find American methods developed to meet American conditions will better suit us than European ways of production. It will be valuable to know even this if it should be true, and Prof. Lake is well qualified to make the investigation from an upper coast point of view.

THE GROUT bill for the protection of genuine butter, which has attracted so much attention in Congress, and has been three times considered by the President and his cabinet, will be voted upon December 6 by the House of Representatives, three days after the assembling of Congress for the short session. This bill provides for an increase of the tax on oleomargarine colored to resemble butter from 2 to 10 cents per pound. Such oleomargarine cannot be lawfully sold in thirty-two leading States, but 62,000,000 pounds were illegally sold therein last year, hence the demand for national legislation. The bill reduces the tax on that oleomargarine which is made in its natural white color from 2 cents to 4 cent per pound, so those may have the mixture who want it, but they will buy it for what it is, and not under the guise of butter. Over 200 of the 356 Congressmen are said to favor the passage of the bill.

THE tuberculosis trouble is assuming acute forms. Governor Stephens of Missouri has issued a proclamation shutting out the cattle from a number of States in which tuberculosis exists. The States against which the quarantine is directed are: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Delaware, Ohio, Indiana, Illinois, Michigan, Wisconsin, Iowa, Minnesota, California, Kentucky and Tennessee and the Dominion of Canada. If the other States should quarantine against Missouri, it would put their breeders of fine stock into such a flurry that the Governor would recall his proclamation.

THE hop growers' meeting at Santa Rosa, June 16, was largely attended and much attention was given to the exhortations of the Sacramento growers to come into a general arrangement to reduce acreage or destroy the crop when the demand was likely to be slack. The Sonoma growers thought they would like to think it over a little, and another meeting will be held on Saturday of this week.

QUERIES AND REPLIES.

Malaria and Winter Apples.

TO THE EDITOR:—Is malaria prevalent in Tehama and Colusa counties, and, if so, is it continuous along the river, and does it extend backward from the river for, say, four to ten miles? What would you deem a good location to raise a good quality of winter apple, and, while the trees were maturing, to raise poultry for market? Could not land suitable for apples, with plenty of water supply, be bought much cheaper than frostless land?—SUBSCRIBER, Duluth, Minn.

We should not say that malaria is prevalent in the counties named. Nearly all the interior valley and foothill counties have malaria for some people, while others are malaria-proof, and, of course, some localities in such counties are worse than others. In some cases probably a few miles of distance from overflowed land may make great difference, but in other cases it may be as common miles away and hundreds of feet higher as it is near a river. We hardly know just what amount of occurrence would constitute prevalence, but we should count Colusa and Tehama counties about as free from malaria as any counties which lie away from the coast.

Winter apples are best grown in the coast valleys or in the high foothills and mountain counties of the interior. The apple needs less heat than the interior valleys and low foothills furnish, to grow slowly and develop flavor and keeping quality, while the same heat which destroys a winter apple may bring an early apple to quick and profitable maturity—except that some valley points are too hot for the thrift of the tree. Poultry is a good orchard adjunct everywhere, if one knows how to succeed with it and will work for success. You can get cheap land for apples, undoubtedly, as you can for most other crops, but it will be somewhat remote from centers of trade and transportation.

Not the Dried Fruit Moth.

TO THE EDITOR:—I send you a box containing some millers which I find among my fruit as I stack it on the dry ground. I would like to know if they lay the eggs which hatch into the worm in our dried fruit; also how long it takes for the eggs to hatch. I am pretty sure it is the miller and I would like to know a means of keeping it away. As soon as the fruit is in the sweat room I can keep it out by sulphur, but I find it as soon as I stack the trays.—J. L. HARLAN, Winters.

The moths you send have nothing to do with the dried fruit worm. They are progenitors of cutworms and each of them would weigh as much as half a dozen dried fruit moths. This dried fruit moth is quite a small insect—smaller than the codlin moth of the apple and pear. These cutworm moths may like fruit juice, but you probably find them among your stacked trays, because it is their habit to hide during daylight and fly at night. Sulphuring is counted upon to repel the moths while the fruit is drying. Sometimes the quick dip in hot water is employed to destroy all insect life when drying is complete, but usually the dried fruit moth attacks the fruit after it is taken up and even after it is sacked or boxed, and if you can keep them from getting a chance in the fruit house you are likely to escape them. Most trouble from the worms in dried fruit comes from contamination after it is finished and after it has left the possession of the grower.

Fruit Injured by Hailstones.

TO THE EDITOR:—I send a sample of Clyman plums. You will notice that they are spotted with dimples. The crop is very generally affected in this way throughout this section of Placer county this season, and there is a wide difference of opinion as to the cause; some consider it to be sunburn, others hail batter and others fungus disease. In our orchard one tree will be quite generally affected, and the next one very light. Also, we find one side of our orchard more affected than the other. The hail destroyed our apricot crop, and the plums next to the apricots seem to be more affected. This hailstorm came on April 2nd, and the plums were about the size of white beans.—GROWER, Placer county.

The spots or "dimples," as our correspondent very aptly calls them, are about an eighth of an inch in diameter on the average. They are hollows or depressions, resulting from injury to the superficial cells, which partly arrests their activity, while the adjoining uninjured tissue is active. This injury not only slackens growth, but it interferes with the deposit of bloom upon the skin, so that, while the surrounding skin takes on its natural bloom, these spots

are of dull and darker color. Later these spots will become brownish, owing to the formation of corky cells, which is the plant's usual way of sealing over an injured part. There is no fungus disease present, nor is the spot due to sunburn, which produces quite a different effect on an exposed fruit. We agree with those who ascribe the injury to the hail. We have on several different years seen such injury in the foothills, and it has always followed hailstorms which occurred while the fruit was quite small. It is probably an instance in which the grower is at the mercy of the elements. In Europe they are preventing hailstorms by shooting small cannons toward approaching rain clouds; but such occurrences are so rare in California and are so unexpected that the grower could hardly get his battery charged before the trouble was over.

Scabs, Shot Holes and Bug Bites.

TO THE EDITOR:—Please examine these varieties of fruit, and in your answer express the disease and treatment of each. The trees of each variety look healthy.—READER, Wrights.

You send rather a forlorn exhibit. Your apples have the "scab"—the work of a fungus which can be largely prevented by the use of the Bordeaux mixture as soon as the fruit is set, and again a month later. Your apricots are spotted with the shot-hole fungus, and the same treatment is effective against that. In both cases a good winter spraying with lime, salt and sulphur will kill the winter spores of the fungus and reduce the severity of the spring attack.

Your young peaches have been pierced or bitten by some insect and from the wound sap has escaped, condensing into gum. Removing this gum leaves a pit or pock-mark, at the bottom of which a healing growth has taken place. The appearance of the injured part is quite different from that attributed to hail in another paragraph on this page. All the fruits you send will be unmerchantable, because the blemishes cannot be repaired by future growth.

Blenheim and Royal.

TO THE EDITOR:—Is the Blenheim apricot larger than the Royal, and does it bear regularly? Does it ripen before or after the Royal, and is it a good drier?—A SUBSCRIBER, Winters.

Our observation is that the Blenheim will run a little larger than the Royal but the difference is slight. It ripens a little later than the Royal, but here, too, the difference is not great. In the coast regions the Blenheim is a very regular and heavy bearer: in the interior the Royal has a better reputation for regularity, and yet as the trees have become older we have heard less complaint about the shyness of the Blenheim than formerly. The Blenheim is a good drying apricot and it furnishes a considerable fraction of the dried product at the present time. It stands next to the Royal in number of trees now in bearing and during the last few years has been even more freely planted than the Royal.

Killing Fleas in Outbuildings.

TO THE EDITOR:—Can you tell me how to get rid of fleas? Our barn is infested with them—a new thing this season. The floor is earth, like many California barns, and it seems to be filled with them. Is this the season for them? Any relief you can suggest short of burning the barn will be thankfully received.—READER, Perris, Riverside county.

In so open an affair vapor remedies would be impracticable. We have succeeded by cleaning thoroughly with a stiff broom, throwing the sweepings as quickly as possible upon a fire previously started. We then used crude carbolic acid, one pint to ten gallons of water, thoroughly stirred and applied with a watering pot or sprinkler. Some report good success on dirt floors by using air-slaked lime as a powder, but we did better with the carbolic acid. Fleas have a long breeding season, but June is reputedly their best month.

EUROPEAN FARMERS haul at one load from two to three tons of produce over their roads, while American farmers often find it difficult to get a ton at two loads to market. Information from 1200 counties, obtained by the U. S. Department of Agriculture, gives 25 cents per ton mile as the average cost of hauling a ton mile to the farmers of these counties. Reports from six European countries gives the cost per ton mile at one-third this amount.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 18, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

COAST AND BAY SECTIONS.

Thunderstorms accompanied by light rains have retarded haying in some sections, but otherwise conditions have been favorable for all crops. Grain harvest is progressing in many localities. Barley is said to be below earlier estimates. Prospects are still good for an average yield of wheat. A large crop of excellent hay has been gathered, and baling is now progressing. Beans are doing well, and will yield a good crop. Cutworms are destroying many hop vines, and it is feared the yield will be light. There will be a large crop of apples in Humboldt and other counties. All deciduous fruits are ripening. Grape vines are thrifty.

SACRAMENTO VALLEY.

A severe thunderstorm, accompanied by rain and hail, occurred in portions of the valley on the afternoon of the 15th. Fortunately, the path of the storm was narrow, and was mainly outside the thickly cultivated fruit and grain sections, but orchards and grain fields in the storm's path were seriously damaged. Hailstones of large size fell in considerable quantities, but the rainfall was light. In other respects, conditions were favorable for crops. Haying is nearly completed; the yield is reported above average and the hay is of excellent quality. Barley harvest is progressing, and wheat harvest has commenced in some places; an average crop is expected, and in some localities the yield of wheat is said to be above average. Deciduous fruits are ripening, and large quantities are being shipped.

SAN JOAQUIN VALLEY.

Cool, partly cloudy weather during most of the week has been favorable for all crops. Harvesting of grain is progressing, though somewhat retarded by dampness in the mornings. Wheat is turning out well in most sections, and some grain men estimate that the yield will be better than expected. Grain has been slightly damaged by high winds in some localities. Water in the ditches is plentiful, and is being freely used. Alfalfa is yielding better than for three years. Olives are setting well. Almonds will probably yield a good crop. Apricots and other deciduous fruits are being shipped in large quantities.

SOUTHERN CALIFORNIA.

Cool, cloudy weather has been beneficial to nearly all crops, though somewhat retarding the ripening of deciduous fruits. Prunes, peaches and plums are still backward, and the yield will be light. Berries of all kinds are plentiful. Grapes in the vicinity of San Diego are ripening slowly; it is reported the yield will be below the average in some sections. Citrus fruits are in good condition. There will be an unusually large yield of honey. Vegetables are looking well. Haying is nearly completed.

LOS ANGELES SUMMARY.—Cool, cloudy or foggy mornings benefited all summer crops. Apricots are ripening. Poach trees continue slow in leafing; the crop will be a failure in places. Oranges are about all shipped, except late varieties.

EUREKA SUMMARY.—Rain injured cherries and some hay in shock, but greatly benefited grain and crops generally. Grass, clover and alfalfa are abundant, and quality is exceptionally good.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 20, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Minimum Temperature for the Week.....	Maximum Temperature for the Week.....
Eureka.....	.38	50.41	35.30	44.19	50	66
Red Bluff.....	.32	23.26	21.55	26.49	52	98
Sacramento.....	T	20.24	15.00	20.27	50	92
San Francisco.....	.04	18.46	16.87	22.44	54	67
Fresno.....	T	10.27	7.78	8.84	54	102
Independence.....	.04	3.69	1.58	4.66	55	94
San Luis Obispo.....	.00	17.20	17.33	16.80	46	92
Los Angeles.....	.00	7.91	5.58	17.24	56	84
San Diego.....	.02	5.95	5.24	9.43	56	70
Yuma.....	.00	1.29	1.34	2.89	64	106

Uncle Sam's Pocketbook.

"Money is cheaper with us than anywhere else among men," says Ellis H. Roberts, Treasurer of the United States, in an address upon the new currency law and the new 2% bonds. "The lowest rate of interest borne by the bonds of any foreign nation is 2½% on British consols. Austria pays 4% for money and Italy 5%. Our bonds of all issues are above par, while some of the English and German government securities sell at a discount. The treasury of the United States is richer in gold than any other nation or any corporation or combination. Its treasure in this form in its vaults, mints and assay offices was, on May 2, \$427,238,600, and it grows, with some changes, as the snow is heaped up in the storms of winter. Here the yellow metal makes its home. Of course, then, when the world needs it, the search will be here. We have ceased to be a debtor nation."

HORTICULTURE.

Present Status of the Fig Insect.

So many of our readers are interested in the progress made in acclimating the fig insect, of which the preliminary steps have been fully given in the PACIFIC RURAL PRESS, that we are glad to find in the last issue of the Fresno Republican a very interesting sketch of the work of the insect and the present status of it in California. It begins by noting the fact that for the first time in the history of the western hemisphere the interesting experiment of transferring the blastophaga or fig-fertilizing insect is now being carried on on a horticultural and commercial scale at George Roeding's Smyrna fig orchard, 7 miles east of Fresno. As is well known, scientific experiments in the propagation of the little insect have been going on in this orchard for some time, but it is not until within the past three days that the operation has reached the commercial scale.

A REVIEW LESSON.—The function of the blastophaga or fig wasp in producing a crop of Smyrna figs is probably too well known to need more than a brief recapitulation. The Smyrna fig, like most edible figs of commerce, contains nothing but pistillate or female blossoms, but is peculiar in not being able to develop its fruit unless these blossoms are fertilized by the pollen from the staminate or male blossoms of the wild Capri fig, so as to produce seed. As nature has provided no direct means of transferring this pollen from the Capri to the Smyrna, some carrier must be found. A quill or a toothpick will serve the purpose, if what is wanted is to fertilize one fig, but when millions are to be fertilized it takes some laborer who will work cheaper and more effectively than human hands can do.

This is the service of the blastophaga, man's tiniest but one of his most useful servants. The blastophaga is born in the lower part of a Capri fig, where its mother thoughtfully laid her egg. This part of the fig is filled with "gall blossoms," which are the home and the food of the infant wasp. When it completes its growth, which requires just the time necessary to develop the fig in which it grows, it emerges a complete insect, enjoys a few brief moments of freedom, during which it flies to a young fig of the new crop, enters it through the minute opening or ostiolum at the apex, lays the eggs for a new generation, and dies. So it goes, through the annual cycle of generations which make up at once the family history of the blastophaga and the Capri fig.

But when the generation which ripens in the June crop of the Capri figs seeks to emerge it finds in its way a dense mass of staminate blossoms, filling the upper part of the fig. In struggling through these masses it becomes dusted with pollen, which it carries on its body to the interior of whatever fig it next enters. If this new fig is a Capri fig the pollen is of no importance, but if the insect can be induced, instead, to enter a Smyrna fig, its covering of pollen becomes of immense importance, both to the fig and to the man who owns it.

WHAT THE INSECT DOES TO THE SMYRNA FIG.—The Smyrna fig is not a desirable place for the insect to go, from its standpoint, but the blastophaga does not discover this fact until she is safely imprisoned inside, and then she has no choice but to perform the work she has been sent to do, though at the sacrifice of her own life and hope of posterity. There are no gall flowers in the Smyrna fig, and the styles of the female flowers are too long for the insect's ovipositor to reach beyond them. So, in searching through the mass of blossoms which fill the interior of the fig, the insect comes in contact with the stigma of nearly every blossom, and deposits the pollen which provides for the fig's posterity, rather than the eggs which provide for her own.

WORK OF THE GOVERNMENT EXPERT.—Ever since last March Prof. Schwarz, the Government entomologist, who was sent out from Washington to superintend the interesting experiment, has been watching the successive generations of blastophagas develop and transmit themselves through the recurring crops of Capri figs. Only a few hundred of the surviving figs of the winter crop were found to be populated with the wasps, but these supplied many more of the next crop, and of the critical June crop there are now fully 12,000 developed figs, each containing upwards of 300 insects, so that there is now available a flock of a round 4,000,000 of these useful domestic animals—quite enough to employ them on a commercial scale.

For the past three days Prof. Schwarz has been engaged with a number of workmen in selecting the insect-bearing figs and distributing them through the trees of the Smyrna orchard. The figs are gathered and examined. It takes some knack to tell which figs contain insects, and it is useless to cut them open to see, as the insects, in escaping, will carry no pollen with them. The selected ones are then sewed to the ends of fibers of raffia and strung on bamboo poles, for convenient carrying. They are then distributed through the orchard, being hung in sheltered places among the branches of the Smyrna trees. About ten figs are used to the average tree, but as many as twenty are used on some of the larger

ones. There will be Capri figs enough this year to fructify about 1200 of the 4000 trees contained in the twenty-six acres of orchard, and it is confidently expected that the result will be a good commercial crop, in this portion of the orchard, of figs whose market value is several hundred per cent higher than that of the ordinary white Adriatic of the local market. If this crop is successfully raised, it will be the beginning of an industry which will be worth millions to Fresno county and the other fig growing districts of the State.

CAPRI FIGS.—A number of interesting observations have been made during the course of the experiments. There are three varieties of Capri figs planted in the orchard, known, for the lack of better names, as "Capri No. 1," "No. 2" and "No. 3." It appears that at least two of these varieties are essential to the preservation of the succession of generations. Variety No. 1 seems to be best adapted to the winter crop, while No. 2 is essential for carrying over the later summer generation. No. 3 is particularly prolific in the June crop, which is the fertilizing one.

HOW THE INSECTS ACT.—The wasps emerge from the figs during the early morning and late afternoon, about ten emerging from each fig each day until all are out. The total active life of the flying wasp outside of the fig is not over six minutes, and its range of flight probably less than 100 yards, so it is necessary for it to attend strictly to business. It flies to a fig and first crawls all around it, examining it carefully. If it is not satisfactory it flies to another, and, when suited, makes for the ostiolum, or opening, and gnaws a tiny piece from one of the three scales which close the mouth of the fig. It then crawls under it, usually losing one or both wings in the process, which are left as tiny iridescent spots to mark the point of entrance. If the new fig is a Capri fig, so much the better for the insect; but if it is a Smyrna fig, so much the better for the orchard owner.

Probably not one in ten of the insects liberated in a Smyrna fig completes its work of fertilization. It may fail to find a fig, during its short lease of life, or it may enter a fig which has not yet reached or has already passed the stage of receptivity.

When the June crop of Capri figs is ripe there is at the same time, on the same tree, a small crop of young figs ready to receive or already containing blastophaga, and another crop, just budding in the axils of the leaves, which will be ready to receive the insects from these figs and carry the generations further. The Capri fig nursery thus takes care of itself, and the chief care, once an orchard is established, is the transference of the insects to the Smyrna figs every June.

Wonderful as this novel use of an insect smaller than a gnat to do man's work appears, there is really nothing unique about it except the necessity of human aid. Most insects, like most bacteria, are useful, and most flowers are fertilized by insects, very many of them by only one species of insect. A crop of clover seed is no more possible without humble bees than a crop of Smyrna figs without blastophagas. The difference is that the humble bees take care of themselves and look out for their own work, while the blastophagas require human care and aid.

Lupins and Vetches for Winter Growth in Orchards.

In view of the growing interest in leguminous plants for green manuring the following circular has just been issued by the University of California Experiment Station, giving an outline, by Mr. J. Burt Davy, assistant botanist, of the results of recent experiments with lupins and vetches. This outline is issued in advance of more complete reports because the seed has at present to be obtained from abroad and must be sown early to secure adequate growth in time for spring plowing.

LUPINS.—"Small blue lupin" (*Lupinus angustifolius cæruleus*, Korn) and "small white lupin" (*L. angustifolius diploca*, Korn). These varieties are reported by the foremen of the Paso Robles and the Pomona sub-stations as being undoubtedly the best species for the light soils in those localities. At Berkeley the first sowing this year was almost completely destroyed by root-rot, but at Paso Robles no disease affected the plants. At Pomona it was found that by treating affected seed with bluestone solution (1 lb. to 10 gals. of water) the disease was completely checked. A temperature of 20° F., which on February 6, 1899, froze the plants stiff, clear to the ground, did not injure them at all. On account of the smaller size and less weight of the seed required per acre, freedom from injury by frosts and by insect pests, it is recommended for more extensive trial on valley soils; bluestoning should, however, be invariably practiced. The blue variety shows some slight advantage over the white. Twenty-six pounds of seed per acre is found sufficient for sowing broadcast; any greater quantity produces too thick a stand for the best health of the plants.

The "large white lupin" (*Lupinus albus*, Linn.). One of the two most satisfactory species under cultivation at Berkeley, Jackson (Foothill Station) and Paso Robles. At Pomona it is injured by frost and

drought, and does not acquire as great a height as the varieties of *L. angustifolius*. It is not affected by root rot, but an insect larva sometimes prevents its seeding freely. It has proved valueless on the stiff, red clay soils of Lake county. One hundred pounds of seed per acre is recommended, the seed being very large.

The "large blue lupin" (*L. pilosus cæruleus*, Hort.) and "pink lupin" (*L. pilosus roseus*, Hort.). These two varieties have been among the most successful of any species tried at Berkeley and at Jackson during the last year. At Pomona and Paso Robles they are injured by frost, and at the former station an insect sometimes destroys the buds, so that little or no seed is formed; they are considered a failure at both places. They are not affected by root-rot. The seed is large and therefore somewhat costly, but there seems to be no reason why orchardists should not grow enough for their own use. On account of their vigorous habit, heavy weight of foliage and disease-resisting qualities, these two varieties are recommended for further trial in the thermal belts. It does not appear that one variety possesses any advantage over the other. One hundred pounds of seed, drilled, per acre is recommended.

VETCHES.—The following species of vetch have made excellent winter growths at Berkeley and at Paso Robles. They cover the ground well, making a dense mat of vegetation, and promise to supply a long-felt want on soils which pack down badly with heavy winter rains:

Berkeley; soil heavy adobe: Hairy vetch (*Vicia villosa*), bush vetch (*V. Cracca*) and common vetch (*V. sativa*).

Paso Robles; soil sandy with hardpan: Hairy vetch (*V. villosa*), scarlet vetch (*V. fulgens*), white vetch (*V. sativa* var.), black-purple vetch (*V. atropurpurea*) and Bithynian vetch (*V. Bithynica*).

The hairy vetch and common vetch are particularly recommended for trial in middle and northern California. In addition to their value for green manuring, they are useful forage plants. A bushel of seed per acre is usually recommended.

TIME OF SOWING.—September and October have been found by practice to be the best months for effective sowing of these winter green manure crops. The month of November, in a warm season of gentle showers, is sometimes not too late. Winter sowing has not been found satisfactory. Spring sowing is usually futile, as the plants have not time to acquire a sufficient growth before the season of plowing-in arrives.

Lupin seed can be obtained from Vilmorin-Andrieux & Cie., of Paris, France, or Dammann & Cie., of Naples, Italy, through any of the large importing seed houses. The various species of vetches may be obtained through almost any large seed house.

In ordering seed of the large blue lupin and the pink lupin it should be noted that in France they are sometimes sold under the name of *Lupinus hirsutus*. For the sake of accuracy botanical names should always be used in ordering either lupin or vetch seed.

SHEEP AND WOOL.

Sheep on Farms in Western Oregon.

We have frequently urged that there should be a farm product of wool lambs and mutton in this State to replace the range interest, which is rapidly passing away. Some hints of what such a farm sheep interest should be can be learned from an account which Dr. James Withcombe, assistant director of the Oregon Experiment Station, has written for the United States Department of Agriculture:

CHARACTER OF THE INDUSTRY.—Sheep husbandry in western Oregon is conducted upon entirely different lines from those of the range system. Here we find a humid climate and a rich alluvial soil, suitable to the growth of a great variety of succulent forage plants. Ordinary mixed farming is carried on in this section, and sheep are too frequently kept as mere scavengers to glean over the summer fallows, or are regarded simply as weed exterminators. The flocks here are usually small and represent the mutton breeds, as mutton is more profitable than wool. Farm surroundings here are exceedingly favorable for the economical production of mutton, and marvelous growths have been secured with the mutton breeds. Possibly there are but few sections of country to which the old Spanish proverb, "The sheep's hoof is golden," is more applicable than in this region. With wheat growing a prominent factor, mutton production will always be found a profitable supplement. These two industries go admirably together. Among live stock, sheep are pre-eminently soil renovators, and, with one possible exception, that of butter, no product of the farm takes less from the land in proportion to its market value than wool and mutton. Then, again, the excreta from sheep are more perfectly utilized as fertilizers than those from any other farm animal. This is due to their comparatively even distribution over fields that are grazed by these animals.

ANNUAL FORAGE CROPS FOR PASTURE.—In the

event of the production of mutton being made strictly supplementary to grain growing, farming of more or less intensive character should be adopted. This involves the growing of clover, rape, vetches and other forage plants as rotation crops, these to be pastured off or to be harvested as hay for winter feeding. A popular method is to grow two successive grain crops, following these with clover or some cultivated crop. A good fall sheep pasture is secured by sowing three or four pounds of Dwarf Essex rape seed per acre with spring oats. The rape makes a good growth in the early part of the season and develops sufficient root growth to enable it to withstand the summer. It revives with the coming of the fall rains and often makes an excellent pasture for lambs or breeding ewes until late in the season. Some of our most progressive wheat growers take two or three consecutive crops of grain, and then seed down to clover. The first crop of clover is harvested for hay, to be fed to the flock during the winter. The clover is then pastured for one or two years with sheep; afterwards the land is broken again for grain. This practice is found to be very helpful in restoring and maintaining the fertility of the land, as well as in making wool and mutton contribute materially to the revenues of the farm.

Another plan is to sow the fallow land to rape about the first of June. This will be ready to pasture within six weeks or two months, and the amount of forage secured from a piece of land thus treated would be a revelation to many farmers. The land is plowed and sown to wheat about the first of October, and, in a normal season, by the following February a luxuriant pasture will be furnished for the ewes and lambs, or for fattening sheep.

THE SHEEP HURDLE.—No well-regulated sheep farm is complete in all of its appointments without the hurdle. This portable fence is an indispensable factor in the successful and economical handling of the flock on a small farm, or where the system of mixed husbandry is practiced. Many opportunities will be presented during the year where it can be used advantageously in dividing pastures or for confining sheep upon certain portions of a field. It will be found invaluable as a quick method for constructing pens, either large or small, at shearing time, or for docking, tagging or dipping. In the winter season these hurdles are a great convenience for inclosing feeding yards, lots for exercise, and small plats for subdivisions of the flock.

The details for the winter management of the flock are probably much less important here than in almost any other section of the country. The winters are usually open, and much succulent feed can be found in the pastures and the grain and stubble fields during this season. It is not advisable, however, even when conditions are most favorable, to depend entirely upon the open field for the wintering of the flock. Grave mistakes have frequently been made by farmers in this respect. Sheep at times will appear to the eye to be doing well, while in reality they are rapidly losing flesh. The old adage that "the eye of the master fatteneth his cattle" is somewhat misleading, and will not apply to the flock. The hand alone can be relied upon to reveal the true condition of the sheep.

AMOUNT OF MUTTON ONE ACRE WILL PRODUCE.—To illustrate the possibilities within the grasp of the farmer for turning his land to profitable account by the production of winter mutton, the amount of mutton that it is possible to produce from the crops grown upon one acre will now be shown from authentic data.

Selecting for our ration corn silage, clover hay and oats, and basing our calculations upon an acre producing 6 tons of fodder corn, 2 tons of clover hay, or 33 bushels of oats, the relative portions of an acre for growing each of these feeds will be for the corn 16%, for the hay 31%, and for the oats 53%. This will give an average product per acre of 1920 pounds of silage, 1240 pounds of clover hay and 630 pounds of oats. With a daily ration of 3 pounds of corn silage, 2 pounds of clover hay and 1 pound of oats, the produce from an acre will feed one sheep 630 days. The ration given is the maximum amount that a matured sheep, weighing 175 to 200 pounds, will consume. A less quantity will suffice for younger sheep, and better gain for food eaten will be obtained. Accepting as a basis for calculation the average results obtained in experimental sheep feeding by the various stations with rations not altogether dissimilar to the one herein given, it will be found that the increased weights obtained will range from about 9 to 15 pounds for 30 days' feeding. This, then, will give us an average gain of 12 pounds per month. It will be noted that an acre is capable of producing sufficient feed to supply the wants of a fattening sheep 630 days, or 10 sheep 63 days. Allowing a gain of 12 pounds per head for every 30 days, we have, as the result of the feed from 1 acre, a gain of 252 pounds, live weight, worth at least \$10.08. This does not represent the full amount of feed that an acre is capable of producing during the whole year, as no account has been taken of the aftermath in the clover, or of the value of the rape, wheat or rye, as a fall and winter pasture, which can be produced in addition to the corn. While this does not represent very large direct returns from the land, it is of interest from the fact that this system of farming in conjunction with wheat

growing will put off the day of purchasing artificial fertilizers almost indefinitely.

PASTURING WINTER WHEAT.—In the spring of 1899 the Oregon Experiment Station, in an endeavor to ascertain the value of winter wheat for pasture, as well as to note the effects of the pasturing upon the yield, selected a uniform plot of 2½ acres of wheat, which was divided into two equal parts by means of hurdles. Upon one part were turned 11 matured sheep, 9 lambs and 3 calves. These were kept there without any other feed for two weeks, until the wheat was pastured down very closely. During their stay on the wheat the aggregate gain in live weight was 200 pounds, with a commercial value of \$8. The lot not pastured yielded only 1 bushel more wheat than the pastured lot. Thus it will be seen that in western Oregon winter wheat can be turned to good account as a spring sheep pasture. Prime muttons are frequently taken directly from the wheat field to the shambles without grain feeding. A supplementary daily grain ration of ½ pound, however, would be followed with better general results.

THE FIELD.

Hop Growing in California.

NUMBER II.

By DANIEL FLINT of Sacramento in Farmer's Bulletin No. 115 of the U. S. Department of Agriculture.

HOP PICKING.—In California the harvesting season begins about August 20; in Oregon and Washington a little later. Picking the hops should be commenced as early as possible, should be prosecuted with all speed, and completed in four weeks, else the hops will turn red and dry on the vines, and the pickers will not want to gather them except at prohibitive prices.

On account of varying soil conditions, some parts of the yard will ripen earlier than others. The pickers should therefore be moved around from place, gathering the ripest and leaving the greenest for the last.

On this coast most of the picking is done by the hundredweight of green hops. This seems a fairer way than by the box, and it is in line with the general market custom here of measuring by the hundredweight instead of by the bushel or other measure of capacity.

The picker is furnished with a knife, a sack, and, to receive the hops, a basket, barrel, box, or a cloth spread on the ground, the last being preferred by the Indians. Each picker takes a row of hops. With the knife the vine is cut 2 or 3 feet from the ground and is pulled violently parallel with the wire to which the string is tied at the top. This will break the string close up to the wire, and string and vine will come down. Then the picking proper begins, and here come in the skill and dexterity of movement if the picker is to make good wages. The object is to get the hops without the leaves. Small leaves the size of the thumb nail or a little larger are not noticed, but larger ones show green in color when dried and lower the value of the product. Vines should not be cut faster than wanted for picking, as they wilt very quickly, making the hop that much harder to pick off. Hops should not be pressed down in the sack or basket, but should lie as light and loose as possible, for two reasons: First, a green hop that is pressed nearly flat will not let the heat pass through it as readily as one in its natural, open state; second, a hop that has been pressed in a box or sack will, if left there four to six hours, begin to heat and turn black, and sulphur will not bleach it out.

Each picker or company (where several work together) has a number which appears on the sack used and is entered in a book. By this means, when the sacks are emptied, any unclean work can be traced back to the picker, whose pay will be reduced accordingly. At noon, and again at six in the evening, the hops are put in burlap sacks holding from fifty to ninety pounds, which are then carried to the kiln, weighed, and hoisted, by means of a swinging crane or elevator run by horse power, to a platform by the drying kiln, and on a level with the drying floor.

THE PICKERS.—In California we are cosmopolitan in the matter of help. A few years ago, before the exclusion act went into effect, Chinese were mostly employed as pickers. Now we have Chinese, Japanese, Indians, and whites, the last being most numerous. Chinese are the fastest pickers, but do the most unclean work; the Indians are the slowest and cleanest pickers; the Japanese pick well, and are the least troublesome; the whites pick well but slowly. Hop picking has become more popular with the whites in recent years. They come with their camp wagons, chickens, dogs, cats, and cows. The butcher, the baker, and the grocery man come around every day and furnish such things as are needed by the pickers, who camp near the yards. No charge is made for wood, water, cabins, tents, or horse pasture. As some of the pickers come without means, part of their wages is paid as fast as due to all who wish, but no

settlement is made till the harvest is done, except in case of some picker who is obliged to leave. It is a good business method to have the head of each picking party sign a contract, stating the price and the conditions under which the work is to be done.

A good picker will gather from 150 to 200 pounds of green hops in a day.

CURING HOPS.—Hops are dried immediately after picking by spreading them on an elevated floor of slats covered with a carpet of burlaps, and heating the air beneath so that it rises through the hops, carrying off the moisture. The structures in which hops are dried are known as kilns, and are of many kinds. In this State great progress has been made in perfecting the hop kilns and presses. Each grower seems to have some different idea, and all are striving for utility combined with economy.

THE KILN.—The essential features of a hop kiln are as follows: The building is made of boards and usually lathed and plastered; is from 16 to 30 feet square, the height to the plate being 20 to 24 feet; the roof runs up with a steep slant from each of the four sides nearly to a point at the top, where is located the opening, 3 feet square, or a little more, for the air to pass out. About 4 feet below the plate and 16 to 20 feet from the ground is placed the drying floor, made of slats, 1 to 2 inches wide, with spaces between of the same width. The space below this constitutes the stove room, in which the air is heated by means of a large stove or furnace with pipes extending from it to a flue at the side in such fashion as to expose to the air a large extent of surface. At the sides near the ground are openings in the walls to allow free entrance of the air from the outside.

From the typical kiln described above, there are many variations in use in the hop growing districts of the world. Sometimes the kiln is built of brick, round in shape, with a conical roof. Often instead of being square it has one dimension greater than the other. In some the roof slants up nearly to a point at the top, on which rests a cowl to keep out rain, fitted with a vane so as to turn with the wind. In others the roof ends in a perpendicular shaft 12 to 15 feet high with the ventilating shutter hinged near the top so as to be opened or shut by means of ropes and pulleys.

The latest development on this coast is the double hopper kiln, with the cooling or storage room located about 200 feet away as a sure precaution against fire. In a kiln of this style the stove is placed in the center of the stove room. Resting on a brick foundation near the top of the stove is the lower hopper, its four sides slanting outward as they ascend so as to rest against the four walls of the building just beneath the drying floor. The upper part of the building from the plate to the ventilator constitutes the upper or inverted hopper. All the draft has to come through the lower end of the lower hopper, passing close to the stove.

There are serious objections to the introduction of this lower hopper. It increases the danger of fire, as the woodwork at the bottom comes too near the intense heat of the stove; also the dust falling down from the drying floor lodges on the sloping sides of the hopper, where it easily ignites. Nearly all the kilns of this style in use in California have, at one time or another, caught fire, and many of them have been destroyed. Another objection to this kiln is that the space within the hopper is too limited for the proper amount of hot air pipe.

The elevation of the drying floor should be not less than 20 feet, as a precaution against scorching the hops. In making a kiln the prime object is to so construct it as to secure a good draft, the air coming in cool at the bottom, becoming heated in the stove room, passing through the layer of hops spread out on the drying floor, and passing out at the top laden with moisture. To increase this draft rotary fans have been experimented with. Some have been placed in the top to draw up the hot air by suction. Others have been placed under the hop floor to force the hot air upward. Thus far the fan system has not been an entire success, but great progress in the economy and dispatch of hop drying may be looked for in the future.

A kiln for a 20-acre yard should not be less than 20x30 feet, and the cooling room should be three or four times as large. The cost of such a kiln is about as follows: Stove \$100, pipe \$75, press \$300, and \$1500 for the building, making about \$2000 in all.

Many kinds of stoves are used in hop drying. In California very good stoves have been made from old locomotive boilers by cutting a large door in the end, and putting two or three belts of angle iron around the middle to keep the boiler from collapsing when hot. A slot 8 inches wide and 3 feet long is cut through the center, fitted with grate bars to let ashes fall through, and a circular hole in the top for the stove-pipe.

The heating pipes should be about 12 inches in diameter, though they vary in different kilns from 7 to 14 inches. Rising from the stove there should be a joint of pipe T-shaped, from the arms of which the pipes run in opposite directions around the room, 2 to 3 feet from the wall and about 7 feet from the ground, gradually rising and entering the chimney on the opposite side of the stove room, the whole forming almost a hollow square. There are many variations from this typical arrangement of the

pipes. In the double-hopper kiln the pipes rise in a sort of irregular expanding spiral form. These pipes are suspended by wires fastened to the girders of the drying floor, or held up by supports resting on the ground. The heating stove is sometimes entirely built over with brick and mortar to reduce the danger of fire. If this is not done, a large piece of sheet iron is often suspended over the stove as a further precaution against fire; and to avoid smoking the hops the pipes should be swept free of the dust which sifts down from the drying floor.

There must be plenty of holes close to the ground to let the cold air in, as the upward motion of the air must be as rapid, free, and continuous as possible. These draft holes should be fitted with shutters. The kiln is commonly built on a brick foundation as high as 3 or 4 feet from the ground. In this foundation the apertures for ventilation are provided for.

On one side of the kiln a platform is erected on a level with the drying floor. To this platform the green hops are elevated and from it they are passed in through a door. Various means are employed for elevating the hops to the drying floor. In some cases inclined driveways are erected, up which teams with loaded wagons are driven. More commonly the hops are drawn up from the ground by means of an elevator or a swinging crane.

DRYING THE HOPS.—The slat floor of the curing room rests on strong joists or girders. Over this floor to receive the layer of hops is spread a kiln cloth or carpet, usually of flax or hemp, made of small hard-twisted threads loosely woven so as allow the air to pass through freely. A good fire should be kept up for several hours to thoroughly warm up and dry out the kiln before putting on the first flooring of hops.

The hops should be spread out on the drying floor as evenly and lightly as possible, and from 18 to 24 inches deep. As to the height to which the temperature should be raised and the number of hours necessary for properly curing a flooring of hops, there are many differences in opinion and practice. In California it is customary to dry a flooring of hops every twelve hours, using a sufficiently high temperature to do the work in that time. A fresh batch of hops is laid on the drying floor at noon and another at midnight. To dry hops successfully requires experience and judgment. A good drier examines the hops every few hours to note how the drying progresses, and see whether he is firing too much or too little. The more rapidly the heat can be drawn through the hops the better, quicker, and more evenly they will dry. If the hot air should remain stationary for a short time the hops would be scorched. Some use a thermometer, keeping the temperature between 125° and 140° Fahrenheit, but nothing can take the place of skill and judgment in the drier.

If the fire has been properly kept up, by nine or ten o'clock the hops around the side of the kiln will begin to rattle. It is then time to turn them. The top hops are the slowest to dry and are constantly pressing down on the drier ones beneath, making it harder for the air to pass through. For these reasons the hops should be turned or stirred. This may be done with a wooden barley fork, or it may be done by walking through them, and thus plowing them up with the feet. In case the latter method is employed, the feet should be dragged along the floor so as to avoid stepping on the hops.

Hops should not be kept in the kiln until every stem or core is dried out. If they are, some will get too dry and powder up. A small percentage of the cores may be left green, as the heat of the mass of hops when removed from the kiln will be sufficient to drive off what moisture may remain.

The doors of the kiln above and below should be thrown open half an hour before the hops are to be taken off in order that they may cool off somewhat, as they are very brittle when hot. It is dangerous to take hops off the kiln while they are slack or underdried. They are likely to heat, and may come to have a smell like that of tobacco, which is hard to get rid of. Slack hops should be turned several times in the cooling rooms before baling.

On an average, it takes about three-fourths of a cord of willow wood to dry a thousand pounds of hops, dry weight. Owing to the gradual ripening of the crop, it takes almost as much again heat to dry a flooring at the beginning of the curing season as it does at the end. The drier must use great caution or he will scorch the last picking. Though ever so fine a hop may be grown, unless it is properly picked and cured the profit of the season's work will be lost. But a small percentage of hop growers can be classed as first-class hop driers. To succeed at it a person should take pride in the business, possess industry and keen judgment, and be always willing to learn.

BLEACHING.—The color of the hops seems to depend largely on climate and soil. In Sonoma county the golden color seems to result from the bleaching effect of fogs and heavy dews. Here the hops will also remain longer on the vines without turning red than they will in a less humid climate. The golden color of the hops grown in and around Sacramento is attributed to the fact that they are grown on sediment land having a clay or adobe subsoil. The color of the hops is even affected by the thick growth of morning glory among them, causing them to be more yellow.

Some buyers want light green and others red hops;

but the principal demand is for yellow or straw-colored hops. This has led to the custom of bleaching or sulphuring. To produce a uniform straw or golden color the process of bleaching with the fumes of burning sulphur is carried on in connection with the curing of the hops. About one pound of sulphur is used for each 100 pounds of green hops. It is put in two or three iron pans, which are placed on brick or iron supports about 2 feet from the ground, and set burning by means of a hot iron or a few burning coals soon after the hops are put on the kiln. If the hops are green or damp, sulphur of the crude or rolled kind should be applied, or it will have but little effect.

Sulphur is used for three reasons: First, to bleach the hops; second, to accelerate the drying; third, for its preservative effect on the product.

COOLING.—The building used for cooling, storage, and baling is most commonly built to adjoin the drying kiln, the floor of the cooling room being 3 or 4 feet lower than the drying floor. When the drying is completed, the hops are thrown through a door in the separating wall, falling on the floor of the cooling room, where they are moved to cooling bins by means of a small car. When the hops come off the kiln they are drier than the atmosphere, and have to go through a sweating process.

In some cases the building used for cooling, baling, etc., is located at a considerable distance from the kiln as an extra precaution against fire. In such cases the hops are usually moved from the kiln to the cooling room by means of a car running on an elevated track, or by means of a large bag or swinging box running on a rope or wire cable.

The room below the cooling room is used for baling and storage.

ENTOMOLOGICAL.

Treatment for the Canker Worm.

Letters and specimens of eggs received by the PACIFIC RURAL PRESS last winter seemed to clearly indicate that the canker worm has appeared in regions not previously visited by this pest, and it is important that all our fruit growing readers should be informed of the most satisfactory protective measures. Fortunately this insect is quite easily held in check if growers will faithfully use the proper means. Such means were quite fully discussed at the last meeting of the San Jose Farmers' Club and reported by the Mercury.

TRAPS FOR THE WINGLESS MOTHS.—The following directions were agreed upon as being the best for the use of the wire canker moth traps: The wingless female moths should be prevented from climbing trees to deposit their eggs in the fall. This can be done by placing a trap of strong wire cloth on the trunk. First place around the tree a piece of cotton batting, and then a strip of wire cloth of No. 16 mesh 6 or 8 inches wide. Tie at top with cord or wire. See that the wire cloth does not touch the tree at bottom. The insects will collect under it and go up as far as they can, being attracted by the light through the netting and there perish. The season of oviposition in California is from the beginning of November until the end of December. After the female has ceased crawling or hatching the traps should be removed and scalded, as eggs deposited on them will hatch and the minute larvae will get through the mesh. The trunks of the trees below the trap should be scrubbed or coated with a thick whitewash.

L. F. Graham stated that thousands of dollars had been spent in the Flickinger orchard in fighting the pest. The measures against them have been reduced to a system and now the trees in that large orchard are almost entirely free from the worms. The speaker said that to kill the eggs and larvae he resorted to the precaution of taking the wire traps off every year and boiling them. In closing Mr. Graham said that a machine of his invention for cutting out the wire traps is now in successful operation on the Flickinger place. It is found to be quick and economical in its work.

BANDS AND POISON.—L. Barnheisel said he had fought the canker worms quite effectively with printer's ink. The sticky substance is daubed upon paper bands about 18 inches wide that are wrapped around the trees. The ink must be renewed at least twice a week, so that there is much work about this method.

Thomas Hardy said that he had noticed that canker worms were not so numerous in orchards where chickens were allowed to run and where there were a number of blackbirds.

After the moth has reached the twigs of the trees and the worms have hatched poison is the best recourse. Spray the infested trees with one pound of parisgreen to 200 gallons of cold water. To prevent the paris green from injuring the leaves dissolve six pounds of fresh lime in water and add the latter to the solution. Keep the mixture constantly stirred while spraying.

A New Black Scale Destroyer.

Horticultural Commissioner E. M. Ehrhorn of Santa Clara county has received a shipment through the

United States Agricultural Department of the South African parasite which is destructive to the black or olive scale. These were obtained direct from South Africa through the efforts of S. F. Leib. The parasites will be placed on a couple of dozen small olive trees at Commissioner Ehrhorn's home at Mountain View. These trees are in pots and have been covered with fine muslin so that the parasites cannot escape. He will release the parasites upon these trees, on which the black scale is well developed, and will observe the action upon the scale. After some time these trees will be transplanted to the orchard if the parasites do well, and they will be allowed to scatter among the trees and propagate.

THE IRRIGATOR.

The Miner's Inch and Its Equivalent in Other Units.

One miner's inch corresponds to 1.5 cubic feet of water per minute. This is the legal allowance in Montana, and is fair average of the measurements actually used in California and other States where no exact value has been prescribed, and where the amounts sold by different water companies vary somewhat.

ONE MINER'S INCH IS EQUIVALENT TO—

	U. S. Gal- lons.	Impe- rial Gal- lons.	Cubic Feet Wa- ter.	Lbs. Wa- ter.	Tons Wa- ter.	Kilo- grams.
Per second.	1	1.2	1.5	1.56	0.0008	0.71
Per minute.	11.2	9.3	1.5	93.5	0.047	42.5
Per hour.	675	562	90	5620	2.8	2550
Per day of 24 hours.	16,200	13,488	2,160	134,880	67.5	61,180

HORSE POWER DEVELOPED FOR EACH 100 FEET OF FALL.

	Theo- retical H. P.	Avail- able H. P.	Avail- able H. P.
WATER UNIT.	at 100% Effi- ciency.	at 90% Effi- ciency.	at 80% Effi- ciency.
By 1 miner's inch.	0.3	0.26	0.24
By 1 cubic foot per min.	0.19	0.17	0.15
By 1 pound per min.	0.00303	0.0027	0.0024
By 1 U. S. ton per min.	6.07	5.5	4.85
By 1 U. S. gallon per min.	0.025	0.021	0.02
By 1 Imperial gallon per min.	0.303	0.027	0.024
By 1 kilogram per min.	0.0067	0.006	0.0053

To obtain 1 H. P. at 100 feet pressure requires 3.5 to 4 miner's inches; or, per minute, 6 cubic feet, 350 to 400 pounds, 40 to 50 U. S. gallons, or 30 to 40 Imperial gallons of water.

CONVERSION TABLE FOR WATER.

U. S. Gal- lons.	Imperial Gallons.	Cubic Feet.	Pounds.	Tons.	Kilo- grams.
1.	0.833	0.133	8.33	0.0045	3.77
1.2	1.	0.16	10.	0.005	4.54
7.5	6.25	1.	62.5	0.03	28.4
0.12	0.1	0.016	1.	0.0005	0.454
240.	200.	32.	2000.	1.	907.
0.264	0.22	0.035	2.2046	0.0011	1.

In the above table the U. S. gallon is taken as 8.333 pounds water, which is very approximately correct; on this basis 5 Imperial gallons = 6 U. S. gallons.

One U. S. gallon per minute = 6 tons water per day. One U. S. gallon per hour = $\frac{1}{16}$ ton per day.

In the case of a running stream of water 6 feet deep, 8 feet wide and a surface velocity of 5 feet per second, the horse power—*theoretical*—can be determined as follows: The surface velocity being 5 feet, the average velocity is $\frac{1}{2}$ of that, or 4 feet per second; then the head—*theoretical*—is 4 squared multiplied by .0155, or .248 foot. Then, multiplying together the number of cubic feet of water per minute, the vertical height in feet, and the weight of 1 cubic foot of water, the horse power is the quotient of the product divided by 33,000, thus: $(6 \times 8 \times 4 \times 60 \text{ (seconds)}) \times .248 \times 62.5 = 5.41 \text{ H. P.}$

This, it must be understood, is the *theoretical* horse power. Upon the kind of motor depends how much of it can be utilized.

THE subway waters near the sea flow into it and are influenced by the rise and fall of the tide, in the same manner that sluggish rivers rise and fall with the tide, although their waters may constantly flow seaward. The rise in the tide increases the underground resistance to the constant flow of water toward the ocean. The waters of artesian wells near the sea have their natural outlet at various distances from the shore, according to the depth and formation of the water-bearing strata. Variations of pressure by tidal action over the outlets of such subterranean waterways will react upon artesian well flow for a considerable distance from the ocean. Ordinary surface wells near the ocean are influenced by the same causes, and are found to vary their water level with the rise and fall of the tides.

TO FIND THE AREA of a section of a ditch with sloping sides, add together the width at top and bottom in inches; multiply the sum by the depth in inches; divide the product by 2; the quotient divided by 144 is the area in square feet.

ONE HUNDRED AND TWENTY-ONE stakes can be driven into a space 15 feet square, no two stakes to be nearer together than 18 inches.

Agricultural Review.

ALAMEDA.

CANNERY OPENED.—Oakland, June 12: The F. B. Hood Canning Company of Emeryville commenced operations this morning with about twenty employees. The management expects to increase its force within a few days to 500 hands. Apricots and cherries are now being put up by the cannery.

LAND RECLAMATION.—Oakland Enquirer, June 15: It appears that the extensive land reclamation undertaking on San Loandro bay upon which E. B. and A. L. Stone have entered was suggested by the success of Ivy L. Borden in reclaiming marsh land near Fitchburg. In five years Mr. Borden reclaimed 300 acres. A dyke was built around the land and when the freshets brought down debris the gates were closed, so that the same dyke that kept the tide off the land held the fresh water on it. This water would be kept standing several feet deep all over the tract until the debris had been deposited. The water would be let out into the bay then, and when the next rains came the gates would be closed. By this process the salt was leached out of the marsh by the fresh water and good soil was deposited on top of the tough sods. After several seasons had passed the 300 acres were plowed with a steam plow, and were completely reclaimed and ready for planting grain.

FRESNO.

POTATO GROWING.—Solma Enterprise, June 14: William Unger has quite satisfactorily demonstrated that potatoes can be easily and successfully produced here. Mr. Unger experimented this season with four varieties: Early Thoroughbreds, Early Six Weeks, Early Mortgage Lifters, and the Rose Eye. The potatoes produced of each variety are very fine, being almost abnormally large, smooth and finely flavored. From 3 pounds of seed of the Early Six Weeks variety 100 pounds of potatoes were produced.

HUMBOLDT.

BANNER BUTTER YIELD.—Eureka Standard, June 9: The month of May this year was the banner month on record in the matter of butter exports, the heaviest previous month's export being that of June of last year, when 603,470 pounds were shipped. The butter shipments in May of this year were 295,370 pounds greater than those of the previous month and 72,530 pounds greater than those of May of last year. The comparison of the May exports of butter for the past five years is as follows: 1896, 41,760 lbs.; 1897, 414,990; 1898, 442,980; 1899, 588,310; 1900, 660,840.

LOS ANGELES.

WILL NOT CELEBRATE.—Chino Champion, June 8: Pomona will hold no celebration of the Fourth this year. The apricot growers protested that labor is so scarce that if they should be obliged to shut down work for a day at that time, they would sustain great loss by damaged fruit, and their request that there be no celebration prevailed.

FORESTRY EXPERIMENT.—Los Angeles Herald: The burned area on the mountains back of Pasadena is again showing a growth of vegetation, for the seeds planted under the direction of the Forest and Water Association are growing nicely. These young trees are the Pinus grandiosa and the seeds were planted by T. P. Lukens of Pasadena, assisted by the forest rangers.

SACRIFICING ORANGE TREES.—Los Angeles, June 15: Hundreds of orange trees in the western part of the city are being cut down. Householders are sacrificing their trees to avoid complying with the fumigation regulations of the Horticultural Commissioners, who are making a crusade against scale pests and serving notices on the owners of all affected trees to fumigate. It costs about 75 cents a tree for fumigation, and an orange tree growing in a city back yard is not worth the money. In case the householder refuses after a reasonable time, the commission has the right to have the work done and charged to the owners, such charge becoming a lien against the property.

RIVERSIDE.

APRICOT CROP SMALL.—Riverside Enterprise: The apricot crop is not near as good as was that of last season. The fruit is not only less in quantity, but smaller in size, and the output of dried fruit will be far less than a year ago. Last year the apricot dryers made money in the business, but the chances are against any big thing in fruit this year.

SACRAMENTO.

RIVER FRUIT.—Sacramento Record-Union, June 6: The fruit shipping season in the great orchard belt between Freeport and Rio Vista, on the Sacramento river, has opened, and two weeks more

will find the boats taxed to their utmost capacity. For the past week the steamers have been bringing up Clyman plums and some cherries. In about three weeks the Bartlett pears and plum crops will be packed and shipped—that is, that portion which will be sent East—and this will be the busiest time of the shipping season. The Bartlett pear and plum crops are good, while the peaches and apricots are light, particularly peaches. A searing of the sap in the early spring played havoc with them, and the apricots are showing about half a crop.

SAN BERNARDINO.

ENLARGED PLANT NECESSARY.—Redlands Citrograph, June 16: Live Oak creamery plant is being enlarged and improved. New boilers will be put in and other additions made by Manager Henry Biggin.

ORANGE BOX MACHINE.—Mossina Citrus Belt: George D. Parker has patented a machine which bids fair to send the professional box makers in search of other employment. His working model is, in reality, a finished machine, although not intended for actual service. It is about 6 feet in height and requires the attention of three men, two of whom are engaged in feeding it. In ten hours its jaws close on shooks enough for 3000 orange boxes and finishes them. Heretofore the boxes have been nailed together at the packing houses by hand labor, an average workman putting together about 250 per day.

LEMON GRADER.—Los Angeles Times: W. S. Cerwin of Highland has perfected a lemon grader. Heretofore the assorting of lemons (as to size) has been done by hand, their elongated shape making it impossible to do it with the orange grader. In Mr. Cerwin's machine the lemons roll on two round cords traveling away from the hopper, apparently parallel, but in reality gradually diverging from each other. If the lemon happens to find lodgment on these cords, so that its longest diameter is parallel with them, it is carried along until it reaches a point where the cords are far enough apart to let it fall between them into its proper bin. If, however, it lands crosswise on the cords, it would, ordinarily, be carried and dumped with the overgrown lemons at the far end of the grader. To prevent this, soft rubber projections are arranged at intervals along the cords, and just outside of them, in such a manner that if a lemon is traveling crosswise one end of it is certain to strike a projection and be turned around to its proper position. The machine is not only more accurate than the hand and eye, but vastly swifter.

SAN DIEGO.

HIGH PRICE FOR HONEY.—San Diego Union, June 14: Beemen who are extracting honey now and bringing it to market are obtaining double the price that was paid year before last. One apiarist obtained \$155 for a wagonload of honey that he brought to market several days ago, and the other apiarists are doing equally as well. Extracted honey brings from 5 to 10 cents a pound and comb honey from 10 to 12 cents. Some back country peddlors have been selling the comb for as high as 20 cents a pound. Beemen fear that the season will not be a long one, but it is generally agreed that it will be a good one as long as it lasts. During the past two years from 50% to 75% of the bees have perished for lack of sustenance; but at the rate the swarms are being hived, there will soon be double the number of stands in many of the apiaries, and the prospects are favorable that there will be food enough in the ranges to support the bees until next winter. In the early part of the past month the farmers commenced to extract honey, when generally they are not ready to commence extracting until July.

SAN JOAQUIN.

FIRST CARLOAD OF WHEAT.—Stockton Mail, June 12: The first carload of this season's wheat arrived from J. E. Moran's place on the West Side this morning, consigned to M. P. Stein & Co. The grain is plump and strictly milling.

SUCCESSFUL IRRIGATION PLANT.—J. B. Cory, who cultivates nearly 1000 acres of land near Acampo, has solved the irrigation problem. He has erected a pumping plant on the Mokelumne river with capacity ample to irrigate 800 acres now planted as an orchard. The plant is equipped with a 150 H. P. engine and boilers of 200 H. P. Centrifugal pumps fill a 20-inch pipe with water drawn from the bottom of the river, the volume of which fills a ditch 4 feet wide and 3 feet deep. The cost of Mr. Cory's plant did not much exceed \$5000. The prunings from the orchard constitute the fuel, in the main.

SAN LUIS OBISPO.

FIRST LOAD OF WHEAT.—San Miguel Messenger: The first wheat of the season was harvested by Fitzgerald Bros. with their combined harvester Saturday on Henry Rucker's field. The first load was

stered in the S. P. Milling Co.'s warehouse by Mr. Rucker on Tuesday. The grain is averaging ten sacks of about 145 pounds each to the acre, and is first class in quality. This grain is harvested and stered about two weeks earlier than was ever known before in this section.

SOLANO.

FIRST SHIPMENT OF DRIED FRUIT.—Vacaville Reporter, June 16: The first shipment of dried fruit for the present season was made on June 8th, dried apricots being shipped on that date from the Cantelow ranch to San Francisco. The probabilities are that this year's shipments will be the heaviest ever made in the history of Vacaville.

TEHAMA.

LARGE HARVESTER.—Red Bluff News: The largest harvester ever seen in the county was purchased by Mr. Douglas S. Cone and is intended to be used in connection with his traction engine. It has a cut of 25 feet, and will cut, thresh and sack 100 acres of wheat per day—about three times as much as the ordinary animal-drawn harvester. Instead of the machine being operated by the action of the wheels, there is an engine fed by steam from the boiler of the traction engine, which makes the action of the harvester so much the easier.

TAR AND PAINT INJURE WOOL.—Cone & Kimball Co. have issued the following circular to sheep men and wool growers: "We are in receipt of complaints from Boston, from the largest manufacturers and dealers in Red Bluff wools, complaining of the use of tar and paint for branding sheep, sending us samples of scoured Red Bluff, which can be seen at our office, and advising us that in the future they will reject and refuse all clips branded with tar and paint. We advise all sheep men not to brand their sheep at all unless they can use a branding ink, such as is used at the East.

PASTURAGE IS POOR.—Dan Ryan, the Diamond Range sheep man, states that feed in the Sierra meadows is not as good this year as was expected. There was not the deposits of snow which foster and force the mountain grasses, the winter having been genial with rainstorms instead of snowstorms, and snow was washed away almost as fast as it fell. The ranges are now full of their usual quota of sheep and cattle. Some of the creeks have an abundance of water, while others are flowing low. The stockmen had hoped for a good season, and the winter could not have been better for the winter ranges in the valley, and they hoped that the fine condition in which the stock left here would be continued in the mountains.

PASTURAGE COMPANY INCORPORATED.—Articles of incorporation of the Saron Pasture Land Company have been filed. Its directors are H. L. Haakonson, N. T. Heaton, M. G. Emerson, C. Lundblad and G. Hanson. The principal place of business is at the schoolhouse of the Jellys Ferry district. Mr. Haakonson is president and Mr. Heaton secretary. The purpose of the corporation is to acquire lands for pasturing stock belonging to shareholders. The qualification shall be the ownership or the contract to purchase lands of the Saron Fruit Colony, and one share of the stock shall be issued to the owner of five acres of land, and more proportionately. Four shares of stock will entitle the owner to pasture three head of stock, which shall be the basis of the right to pasture. Each shareholder must bear his burden of the construction and keeping up of fences. The company is not organized for profit and there is no capital stock.

TULARE.

URGES SUMMER PLOWING.—Tulare Register: W. A. Gray of Tipton believes in early plowing—as soon as grain is off. He holds that it is better to plow under weeds while young, rather than wait and burn them. He holds that summer plowing puts the land in condition to get the full benefit of winter rains, and, what is quite as important, adds to the fertility of the soil. He cites examples to prove his claim—ten or twelve sacks from the summer plowing, with nothing on winter plowing.

COST OF WATER FOR IRRIGATION.—In a letter to the Tulare Register H. K. Ayer writes on this interesting subject as follows: I have been asked many times to give the cost of pumping water for irrigation purposes. I desire to say that I have had a good chance in the last three months to give the matter a thorough test with wood and coal as fuel. I have also investigated the power of gas generated from crude oil, as well as electricity, for supplying the power for pumping, and have now reached a calculation which I think nearly correct: Cost of 1000 gallons, power supplied from good steam coal, 1½ cents; cost of 1000 gallons, power supplied from electricity, ½ cent; cost of 1000 gallons, power supplied from generated

crude oil, ½ cent. You will see from the above that electricity and crude oil produce the same results. I contend that six months' irrigation in the first part of the year is all that we need for this section, and that 180,000 gallons of water has proven to be a very reasonable amount for one acre of orchard.

YOLO.

WILL SURVEY CACHE CREEK.—Woodland, June 15: It has been determined that Cache creek will be included in the list of California streams to be surveyed for irrigation purposes under the direction of the Department of Agriculture. The Chamber of Commerce of this city has raised the necessary funds, and A. E. Chandler, who will have charge of the work in this section, was in Woodland today and completed arrangements to begin operations next Tuesday. The first survey will be of Clear lake.

ARIZONA.

CROP REPORTS.—U. S. Crop Bulletin, June 12: Harvesting is in active progress in the Upper Gila valley, and the yield from wheat and barley crops is very good. An average crop of Irish potatoes will be made, and the planting of corn is about completed. The soil is in excellent condition. In other localities the prospects are not so favorable, where the harvest has afforded greatly diminished amounts as compared with the yield of previous years. In Salt River valley the growth of vegetation has been partially arrested on account of the extreme aridity of the atmosphere and inadequate water supply, and fruit trees are showing bad effects from the same causes. In orchards where winter irrigation was applied the trees are in a much better condition. The ranges are deteriorating in many sections, and drinking water for stock is very scarce; much suffering is caused therefrom.

OREGON.

HOP CONTRACTS.—Portland Oregonian, June 12: Two hop contracts were filed to-day, conveying hops to be grown this season, the price being 9½ cents per pound. By one John and Frank Fischer of Mount Angel convey 20,000 pounds of hops to Benjamin Schwartz & Sons of New York. By the other J. N. and C. J. Geeding of St. Paul convey 12,000 pounds to the Charles Ehlerman Malt & Hop Company of New York.

NEW METHODS OF FARMING.—Oregon Agriculturist: The system of farming in the Willamette valley is changing. Clover fields, which were hard to find except near Portland half a dozen years ago, are now to be found almost everywhere throughout the valley. There is a widespread interest in forage plants of all kinds, and a determination to find some method of avoiding the wasteful system of bare summer-fallow. The demand for rape seed this spring has been far in excess of the anticipations of seedsmen. Cornfields will be found almost everywhere throughout the valley, and silos will be built this year literally by the hundred.

PRUNE ASSOCIATION.—Portland Oregonian, June 12: The Cured Fruit Association, organized in Portland last week, expects to ship 350 carloads of dried prunes from Oregon this year, and 150 carloads from Washington and Idaho, according to Secretary H. E. Dosch, who says the association already controls 75% of the output of these three States in its membership. Prune drying will begin about Sept. 20, and the association will have its own packing houses at convenient points. The label of the organization will be affixed to each parcel, and shipments will be made direct from each district. A good market for the prunes of the Northwest has sprung up in every city where there is a large German population, and when the article has once been introduced it holds its own. The prune crop of Oregon and Washington is lighter this year, on account of unfavorable conditions after the trees blossomed in the spring, but in Idaho the yield will be up to the average. A good many new driers are being built in the Snake River valley, in consequence of the increased yield.

Horse Owners! Use

GOMBAULT'S Caustic Balsam

A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

Nighttime in California.

Nighttime in California! There's nothing like it found,
Though to and fro you come and go and journey earth around.
The skies are like a crystal sea, with islands made of stars;
The moon's a fairy ship that sails among its shoals and bars.
And at the sea I sit and look and wonder where it ends,
If I shall sail its phantom wave, and where the journey tends,
And if—in vain I wonder; let's change the solemn theme,
For nights in California were made for men to dream.

Nighttime in California! The cricket's note is heard,
And now perhaps the twitter of a drowsy, dreaming bird.
An oar is splashing yonder; the wakeful frogs reply;
The breeze is chanting in the trees a ghostly lullaby;
The moon has touched with silver the peaceful, sleeping world,
And in the weary soul of man the flag of sorrow's furled.
'Tis a time for smiles and music; 'tis a time for love divine,
For nights in California are heavens this side the line.

Nighttime in California! Elsewhere men only guess
At the glory of the evenings that are perfect—nothing less;
But here the nights, returning, are the wondrous gift of God,
As if the days were maidens fair with golden slippers shod.
There is no cloud to hide the sky—the universe is ours,
And the starlight likes to look and laugh in Cupid-haunted bowers.
Oh, the restful, peaceful evenings! In them my soul delights,
For God loved California when he gave to her her nights.

—A. J. Waterhouse.

Unconventional Courtship.

"This sort of game is all well, but if it lasts much longer I shall be a perfect wreck," said Arthur Mason to himself one evening, as he sat gazing thoughtfully at the fireplace. "For the last six months I have been head over heels in love with Vera Fray, and, what is worse, had not the pluck to tell her so. But she is such a peculiar girl" (he argued in self-defense). "If it was any one else I wouldn't hesitate a moment."

Mason was a man about twenty-five, and as full of passion and sentiment as a man well could be. But he had been brought up in orthodox English style, with many sharp lessons never to betray his feelings. These lessons had been so hammered into him in his youth that he found now that even against his own wishes it was almost impossible to show what his real opinion was of anything that affected his likes or dislikes. When he was most happy people thought him sad, and vice versa. It was, perhaps, on account of the peculiar way he had of looking at things that he invariably saw the funny side first, sometimes on the most serious occasions.

His passions for Vera at times made him laugh, and when on the verge of proposing to her the thought would strike him how foolish he would look. The truth of it was, he knew too much of the world, and the love affairs of his friends had appeared ridiculous to him.

One of the chief attractions of Vera in his opinion was her passive nature, and it was that perhaps which made him falter. The idea of her being in love seemed absurd to him.

The week following the self-communings just recorded, he knew that Vera would be at a dinner party to which he had also been invited, and he determined if an occasion arose for a serious talk, to have the matter settled. How he would manage it he did not dare to decide; chance he thought would have to be his guide.

Mrs. Fairburn's drawing-room was well filled on the night of the dinner. So much so that poor Mason's heart sank. If Vera did come his opportunity for a tete-a-tete with her appeared small.

She was a popular person, and he knew she would be dragged off to entertain some of the "lions" of the evening.

The Fairburns' house luckily boasted one of the finest gardens in Sussex, and if he could persuade his idol to go for a stroll in that garden he meant to do so.

At dinner Vera sat directly opposite him, and he inwardly blessed his hostess for not crowding the table with flowers, ferns or ornaments, which would have hidden her charming, clear-cut features from him. When looking at her a calm always came over him that he could not explain. Even when absent from her, he generally pictured her as a limpid spring from which peace was always flowing. Nothing on earth, he imagined, could ever ruffle her.

The dinner passed off perfectly. All seemed thoroughly pleased with themselves and the world in general.

It was an hour later, and he was sitting by Vera's side in the drawing-room. They were enjoying an animated discussion on some topic of public interest, and no chance had so far presented itself. At last, in pure desperation, Arthur blurted out, during a slight fall in the tide of argument: "This room is terribly close; shall we finish our little controversy in the garden?"

Vera was nothing loath.

It was a lovely night; the sky was a mass of twinkling stars, and the moon gave a light that one could easily read by. Such a moment seemed specially ordained for love-making, love whispered in the trees and echoed in the bushes. And yet these two still continued to disagree, as if such romantic evenings were intended for the battle-dore and shuttlecock of social commonplace.

They had by now wandered to an arbor, and without either of them drawing attention to it, they entered and sat down in the two deck chairs it boasted. Vera tried to continue the subject at issue, but Arthur remained silent. In this wise the conversation stopped, and each became absorbed for the first time in the beauty and stillness of the night. Presently, with startling abruptness, the silence was broken upon.

"Vera," said Arthur, turning toward her, "would you care to marry me?"

It was not, by a long way, the first time she had received a similar request, for she had been vainly courted by the richest and highest in the country. So vainly, indeed, that people were even beginning to hint of the shelf when speaking of her. But whether it was the suddenness of the request, or the personality of him who made it, for the minute her confusion was obvious, though luckily for her, the moon did not light up this little arbor. Calming herself immediately, and looking quickly up at her companion, Vera queried: "Why do you ask me? You don't think I'm in love with you, do you?"

"No, in fact, I am sure you are not."

"Then that settles the question without further trouble," said Vera, carefully rearranging her shawl and establishing herself in a more comfortable position, as if some knotty problem had been solved.

"Not at all, for you haven't answered me."

"You have answered yourself, though you would hardly marry a woman who did not love you."

"That's one of the reasons I am asking you," replied this cool diplomatist.

"Then before answering," she said, appearing to be interested in this strange species of proposal, "let me question you. Do you love me?"

"No, I don't."

"Then why on earth do you talk such rubbish? How can you wish to marry me?"

"Simply because neither of us is in love with the other, which shows that we are both mentally and physically in sound health."

"You consider, then, that love is a disease; in fact, I suppose," she added sardonically, "a kind of a disordered liver?"

"Exactly. But let me put the ease

before you properly," said Arthur, rising and walking up and down in front of her as he spoke. "You and I have been friends for twelve years, and by now know each other thoroughly. I am thankful to say I have never loved you, nor, to my knowledge, have you loved me, and it is these facts which convince me we should make a thoroughly congenial and happy married couple. On these grounds I again ask you—will you marry me?" he concluded, stopping opposite Vera's chair.

During this curious monologue the moon had traveled somewhat on its journey, and now cast a pale light into the arbor—just enough to show Arthur that his fair companion's eyes were twinkling, and that she was on the verge of smiling. Looking straight at him, Vera composedly answered:

"Your philosophy, dear Arthur, is excellent, and your case apparently fully proved, but—er—if you would not mind sitting down here" (nodding toward the empty chair at her side), "hold my hand and look me full in the face, and then tell me that you are not head over heels in love with me, I will believe that for the last five minutes you have been speaking—as they say in courts—the truth, the whole truth and nothing but the truth."

Arthur felt dazed. He sat down and took his pretty companion's hand—he observed it was beautifully soft. He looked into her eyes—he noticed they had in them a light he had never seen before, and that on her face was a smile and an expression that could have but one interpretation—and he faltered.

* * * * *

And the silence of night wrapped the arbor in its embrace. A bird moved in the ivy—a nightingale called to its mate—and the moon traveled farther on its journey. It sank—but not before it had witnessed what, in the course of its considerable experience, it had often seen before, but of which—it never told.

Blood Poisoning.

It seems to be certain that valuable life has been often lost by carelessness in regard to small cuts. A woman working about the kitchen who receives a small cut on the hand generally binds up the wound and goes about her work with no further thought of the matter. Her hands are put in all manner of things in cleaning about the house, working outside, perhaps, in the flower garden, and engaged in the thousand and one tasks which her hands find to do. If she is fortunate the wound heals up, but this is not necessarily the case. Blood poisoning may result from the most trivial wound.

The palm of the hand is almost as dangerous a portion of the system to wound as the soles of the feet. The result of wounding either the soles of the feet or the palms may be lockjaw. When we remember the impurities in the soil, in the air and in various parts of even the cleanest house, it is strange that we do not hear of more cases of blood poisoning arising from trivial cuts.

A very weak mixture of carbolic acid and water, such as a druggist or physician who deals in drugs can furnish, should be kept on hand to prevent danger. It should be poured on a cloth and wrapped around any such wound, after first washing it carefully. This mixture, which contains about 10% of carbolic acid in water, is sufficient to purify any ordinary wound and keep out impurities if it is well wrapped with clean, dry cloth. Even the scratch of a needle or pin in the laundry tub may cause blood poisoning if the water contains coloring matter or any impurities powerful enough to cause this result.

EMINENT STATESMAN: "Put these memoranda into the form of an interview and send it to all the papers. If it is well received I will interview myself again and say that I am glad to see the public agrees with me."

Private Secretary: "But suppose it is not well received?"

Eminent Statesman: "Then I will say that I haven't seen a reporter for six months."

Love's Passage.

As one, in passing through a darkened room,
Should brush the fine-drawn, gold threads of a harp,
And thus, though all unwittingly, should wake
A chord of rich and tender melody—
So your dear love, unconsciously at first,
Found its response within my waiting heart,
Which barred, unseen, your pathway as you went.

—Century.

The Squire's Hobby.

For ten years people had been waiting for Squire Harding to marry. East and west he was known as "the catch" of Oakdale.

In the first place, he was very handsome; then he was very wealthy, and finally he was irreproachably connected, and, as the most wary young lady of Oakdale said, there was "nothing disagreeable about him."

But the squire had his idiosyncrasy—his hobby. It was health. He had uttered a vow never to marry a woman who was not perfectly healthy.

Most people thought Oakdale girls buxom and blooming enough, but the squire's observant eyes saw erysipelas in burning cheeks, consumption in narrow shoulders, dropsy in plump forms. It was only when he beheld Gladys Ray that this exacting man was satisfied and enthusiastic.

She had just come from a year's stay with her grandparents in New York, and was barely sixteen. Pretty—well, that is no word for it. She was just as lovely as a new-blown rose. And she was as good as she was pretty, and as loving as she was good, and every one would have seen it was out of the question for her to marry Squire Harding, a worldly man of forty, with a shrewd eye for the main chance.

She was just as unselfish as a sunbeam, as impulsive as a kitten, as guileless as a violet and cared nothing for the position Squire Harding could offer his wife. She never knew what to say to him when he came to Clematis cottage, as her home was called—was afraid of his bass voice and shy of his facetiousness, and yet he came and came, and her father encouraged his suit, and Gladys was told she must agree to marry him.

Must, because business was dull, and there was a mortgage on Clematis cottage, and there was no sense in a girl refusing such a chance. Of course, she would never have another like it in a lifetime.

She had no mother, but her brothers protested, telling her that she was a goose, and at last the poor girl was harassed into making a half-promise that "perhaps some time she would."

But her father at once set in motion preparations for the wedding and sent for Aunt Phoebe.

Aunt Phoebe was an uncommonly skillful needlewoman, but what was more in Gladys' case, she was a person with a heart.

One morning she went into Gladys' chamber and found the girl hastily putting away a letter—a letter postmarked New York, and directed to herself, in the boldest and handsomest of chirography. Having put the letter under lock and key, Gladys turned silently to be measured for a new embroidered waist.

"Are you tired, Gladys?" Aunt Phoebe asked.

"A little," replied the girl.

"Didn't you rest well last night?"

"Not very."

"Gladys, you are my dear dead sister's child! Tell me what ails you."

"Oh, auntie, my heart aches!"

And she put her face on the broad, womanly shoulder and burst into tears.

"There, there, dearie! I knew it was a heart trouble. Tell auntie all about it. I don't believe you want to marry Squire Harding."

"I don't—I don't!" sobbed Gladys.

"Then you shan't marry him! I'll put a stop to this work, sure as my name is Phoebe Ray! I don't know how now, but I will!" * * *

One morning she presented herself at Squire Harding's door, and was shown

into his private room, where he received his clients.

"Sit down, madam—sit down," said the squire.

"The subject of my call is my niece."

"Ah!"

"Yes. I suppose you will be deeply interested in this!"

"Certainly—certainly! Anything which concerns my pretty little Gladys! Ah, that is an uncommon girl, Mrs. Ray—so gentle, so fair, so healthy—"

"Ahem!" croaked Aunt Phoebe, ominously.

"What, dear Mrs. Ray! is not Gladys well?"

"Far from it."

"You amaze me! Has some outrageous disease approached that lovely girl?"

Aunt Phoebe shook her head and solemnly said:

"Chronic."

"What—what is it?"

"A heart trouble!" pronounced Aunt Phoebe, solemnly. "What the poor child suffers from it no words can tell." * * *

"Yes, yes! Well, now, my dear lady, what course ought I to pursue under these remarkable circumstances? With my peculiar views on the subject of health—my very decided views—I really cannot be expected to proceed as if—the circumstances were different."

"I don't know anything about that. I cannot advise you. But I feel as if I had done my duty."

"But I—can I honorably retract? Can I withdraw from my proposal?"

"My brother-in-law is of a very choleric temper; I cannot say. But you might be called away."

"I am called away. I have urgent business in Liverpool, and I am the man who should be on the spot. No indirect agency will avail. I shall go abroad at once, Mrs. Ray. And Miss Gladys—she is very pretty—no doubt may supply my place, in the course of a year, with some one who—who has not the peculiar and very decided views on health that I hold. And you—since you seem a lady of uncommon sense and superior ideas of the fitness of things—will perhaps use your influence to—"

"Certainly, to smooth my niece's pathway, of course."

So the conversation came pacifically to an end, and two days later the squire sailed for Liverpool. The news came to the Rays like a thunderbolt, for the father and son had prospectively secured a large slice of the good fortune from Gladys wedding the rich squire. But he was gone—for a year or more, report said—and after a furious and senseless anger against Gladys, the poor girl was left in peace.

When Aunt Phoebe went home to her quiet seaside dwelling at Bayport she took Gladys with her on a visit, and one day she privately wrote a letter to Dick Archer, who she had learned through Gladys' grandfather was a most promising young man.

The result of this letter was to bring the young gentleman also to Bayport on a visit, and the young people had plenty of time in which to plight their vows and take wise counsel with good Aunt Phoebe.

Through her influence Archer was soon prosperously established in life, and now, in happy motherhood, happy and rosy with her own rosy babies, Gladys, the wife of a good husband, has far less heart trouble.

A BAREFOOTED Scottish boy applied for work at a manufactory; he was told he must "get shoes to wear." In two months he earned the shoes, and applied again; but "he was ragged." In six months he came well clad; but "you must read and write." For fifteen months longer he studied at evening school. That boy became foreman of the establishment.—Success.

In Japan what we call "after-dinner speeches" are made before dinner, thus insuring brevity, and furnishing topics for conversation during the meal itself.

"OBSTACLES," says Michelet, "are great incentives. I lived for whole years upon the 'Æneid,' and found myself well off."

The Care of Kid Gloves.

A little painstaking care will prolong the creditable appearance and life of kid gloves indefinitely. When purchasing gloves it is well to get a spool of cotton thread of the same shade for use in mending rips and torn places.

To attempt to mend a glove with silk thread is to court disaster. The glove will likely be torn and cut by the thread and one's temper somewhat ruffled.

To clean soiled gloves place them on the hand and rub briskly with benzine. To give them a new appearance, as soon as they are dry, apply with a sponge a solution of dye for wool, of the color desired. When dry again the gloves should be thoroughly rubbed with a little sweet oil and then wrapped in flannel and placed under a heavy weight. This treatment will give them a glossy, smooth look.

Of course, almost every one knows to button the second button first, to relieve the strain on the first button, and to remove gloves by first turning the wrist wrong side out; also not to button one glove with the gloved fingers of the other hand, or a new pair will be a necessity soon, for the fingers will be promptly worn into holes.

The surest way to health, say what they will,

Is never to suppose we shall be ill, Most of those evils we poor mortals know, From doctors and imagination flow.

—Churchill.

It cannot be too often repeated that it is not helps, but obstacles, not facilities, but difficulties, that make men and bring final success.

All things which are not accomplished in their time, shall be left unaccomplished forever.—Zoroaster.

And all our yesterdays have lighted fools the way to dusty death.—Shakespeare.

DOMESTIC ECONOMY.

Things to Know.

To Remove the Odor of Mutton.—This recipe is an original and tested one from an old cook who made use of it for her own personal benefit. This peculiar odor which permeates the flesh of lambs and sheep, the latter especially, is very offensive to most people, and many who would otherwise enjoy the meat cannot eat it on account of this unpleasant attribute. The remedy is simple and inexpensive, for all that is necessary is to take the juice of one lemon and beat with it sufficient butter to make a gravy, and pour this over the meat when broiling, or when putting it into bake; it applies to frying also. Another method which she gave, and which may possibly be known to others, is to pour the gravy of the meat when it is done over some freshly gathered mint leaves, allowing it to remain long enough for the mint to thoroughly flavor it; then pour it back over the meat. This is known as mint gravy.

To Preserve Stale Bread.—When stale bread has become so hard that it cannot be eaten, it should be grated into a coarse powder, and put into jars the same as those used for preserves. If kept well covered from the air, and in a dry place, it will keep for considerable time without becoming mouldy or bad. It is not always convenient to obtain stale bread just when one wants it, and these powdered crumbs are very handy to have on such occasions as when a bread pudding is being made, when desired for fowl dressings, or in forming meat balls, fish croquettes, etc.

To Mend China.—Accidents will happen, and it is not unseldom that a bit of fine china or a highly prized porcelain ornament is broken, whose loss would cause regret to the owner, but if the following recipe is used and carefully observed in handling afterwards, it will insure the safety of the broken article: Mix together equal parts of fine glue, white of eggs and white lead, and with

it anoint the edges of the article to be mended; press them together, and when hard and dry, scrape off as much of the cement as sticks about the joint, that is all that is necessary. The juice of garlic is another good cement, and leaves no mark where it has been used.

Breakfasts.

"What is this delicious breakfast food?" asked a friend who shared our morning meal not long since, while eating a big saucerful of it, embellished with Jersey cream. We explained that it was just plain cracked wheat, bought in bulk, and when our friend wondered how we had time to prepare for breakfast a cereal that requires such long cooking we explained our method, which is simply to cook it the day before in a double boiler. Our rule is one teacupful of wheat to a quart of cold water, salted to taste. After cooking one and a quarter to one and a half hours it is removed from the fire. It will then seem a little thin and will have a layer of water on top, but if allowed to stand over night all the surplus water will be absorbed and all that will be needed to prepare it for breakfast will be to place the double boiler again over the fire and warm it up. This will take but a few moments.

Light breakfasts, consisting of a cereal, bread and butter, coffee, fruit, eggs, potatoes or something equally delicate and quickly prepared, are more and more advocated by dieticians. Americans as a rule eat too large and too hearty breakfasts and as a race they suffer from rheumatism and other diseases resulting from an excess of uric acid in the system produced by too much animal food. In the morning the stomachs of the majority of people are not in condition to dispose of a hearty repast, nor does appetite demand it. Meat should therefore be reserved for the meals that come later in the day.

A simple breakfast that can be easily prepared will make fewer demands upon the time and strength of the housewife who can thus husband her energies for the day's work ahead of her, and this should be a strong argument in its favor.

We have heard farmers declare that their hired help would not eat breakfast foods, but have never yet seen them refused when properly cooked and served with cream, a luxury that every farm should afford in abundance but that on too many tables is conspicuous by its absence.

Strawberry Desserts.

The following selected recipes for strawberry desserts will be appreciated by lovers of this delicious fruit:

Strawberry Frappe.—A delicious and simple dessert; crush slightly a quart of fresh strawberries; pour on a cupful of sweetened orange juice and a half cupful of sweetened water. Freeze to the consistency of a frappe and serve in glasses with a spoonful of whipped cream and a strawberry on top.

Strawberry Ice Cream.—One quart of cream, one cupful of sugar and one tablespoonful of vanilla. If the cream is too rich, dilute it with milk. If preferred, scald the cream and sugar, and, after cold, add flavoring. Freeze as for ordinary ice cream, then remove the paddle and pour into the freezer one pint of hulled strawberries, sweetened and crushed. Mix fruit well, then pack the mold in ice and salt for two hours.

Strawberry Shortcake.—One quart of sifted flour, three teaspoonfuls of baking powder, one of salt, one of butter, one of lard, sufficient milk to make a soft dough, two quarts of strawberries. Sift the baking powder, salt and flour, rub in the shortenings and make a dough with the milk. Turn into greased tins and bake in a hot oven. Cut off the top and spread butter and crushed strawberries inside. Spread berries and whipped cream over the top and serve strawberry juice and whipped cream as a sauce.

Strawberry Sauce.—Make a hard sauce by beating thoroughly together one-half cupful of butter and one cupful

of sugar; flavor with vanilla. Add the whipped white of an egg and a cupful of crushed strawberries.

Hints to Housekeepers.

Nothing cleanses the linen so nicely as borax, and it should always be used in the wash water.

In making an oyster stew many New England cooks add three or four clams, which bring out the flavor of the oysters and give a delicately saline taste that adds much to the stew. It is worth trying.

When the physician's orders forbid the use of acid or juicy fruit for the early supper in the nursery, one or two of the large figs or three or four of the small black figs will be found a wholesome and appreciated addition to the limited menu allowed.

When an invalid's room needs sweeping the best way is to wipe up the carpet rapidly with coarse towels wrung out of cold water. This disposes of the dirt without annoying the patient either by dust or noise, and is the method employed by trained nurses.

Nothing looks worse than grimy matting, and yet it is not difficult to keep it in good condition. First have it well shaken to remove all dust, and then wash it with salt and water. It must not be made too wet, and well dried afterwards with a cloth. If there are any stains, alcohol will remove them.

To remove fruit stains from linen, dampen the spots, rub soap on both sides, then apply starch made into a paste with cold water. Rub the starch into the stains and hang it in the sunshine for several hours. Or put a heaping teaspoonful of soda into half a cupful of sweet milk and rub the mixture into the stained spots. After the cloth has been washed in the ordinary way the stains will have disappeared.

Instead of eating a plate of ham or eggs and bacon for breakfast, more people would do far better if they took some grapes, pears or apples; or, if fresh fruit can not be obtained, stewed prunes, figs, etc. If fruit of some sort formed an important item in our breakfasts, women would generally feel brighter and stronger and would have far better complexions than is the rule at present.

When a ground glass stopper sticks fast in a bottle the safest plan for loosening it is to wrap a long strip of rag around the neck of the bottle, over which a stream of boiling water should be poured. If the glass is very thick begin with warm water, then use hot, and finally boiling, or the glass will crack. Then the rag can be taken off, when the neck of the bottle will have sufficiently expanded to allow the stopper to be withdrawn. Sometimes it is necessary to repeat the operation, which, except in very bad cases, is invariably successful. One must not wait too long after applying the water, lest the heat also extend to the stopper and swell that.

Tea is an agreeable stimulant, quickening intellectual operations, removing headache and fatigue and promoting cheerfulness and a sense of well-being. A cup of tea now and again is a most refreshing and excellent thing, but when it is used to excess the digestive and nervous systems are especially affected. There is no doubt that there are cases of dyspepsia caused by the inordinate use of strong tea, and it is also a matter of common observation that sleeplessness, palpitation of the heart and nervous irritability often follow the prolonged and excessive use of this beverage. People who drink tea to excess are to be found in all classes of society, and the fact should be impressed upon such persons that tea is not a food, and can not, therefore, without risk to health, be substituted for articles of diet which form both flesh and bone.

CRACKER PUDDING.—One quart milk, one cup sugar, six Boston crackers rolled fine, one teaspoonful baking powder, two well-beaten eggs, a little salt, a tablespoonful butter. Flavor to taste and eat with a sweet sauce.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, June 20, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	June.	July.
Wednesday.....	72½@—	72½@74
Thursday.....	72¼@—	74¼@72½
Friday.....	73¼@—	72¼@74¼
Saturday.....	74¼@—	74¼@75
Monday.....	75 @77½	75½@79¼
Tuesday.....	76½@—	79½@77

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday.....	5s 10½d	5s 10½d
Thursday.....	5s 11½d	5s 11½d
Friday.....	5s 10½d	5s 10½d
Saturday.....	5s 11½d	5s 11½d
Monday.....	6s 0½d	6s 0½d
Tuesday.....	6s 1½d	6s 1½d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec. 1900.	May, 1901.
Thursday.....	1 03¼@1 03¼	— @ —
Friday.....	1 03¼@1 05¼	— @ —
Saturday.....	1 07 @1 06¼	— @ —
Monday.....	1 09¼@1 08½	— @ —
Tuesday.....	1 07¼@1 08½	1 13 @ —
Wednesday.....	1 10¼@1 12¼	— @ —

WHEAT.

More firmness was developed in the speculative market for wheat than during preceding week, the increased strength being based on the poor crop conditions in a large portion of the wheat region tributary to Chicago and ordinarily termed the Great West. Speculative values in this center responded much more readily to the influence than did prices for spot wheat or immediate deliveries. There was never a more thorough lack of competition among buyers than at present. The situation on the buying side is practically as though in the hands of one man. Shippers act in unison, all having the same price. With most of the flouring mills in the combine, there is naturally little or no local competition in the purchase of milling wheat, and there is no clashing between the shipping and milling interests. With this absence of competition in the local market for wheat, and with ships continuing scarce and outward freights high, it is not surprising that values for spot wheat are affected much more readily by bearish or depressing than by bullish or upward influences. It is not probable that there will be very much relief until the market is liberally supplied with ships and ocean freights get down to reasonable levels. At this writing (Wednesday noon) the speculative markets are strong at highest figures of the week, but prices for spot wheat fail to advance correspondingly.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1900, delivery, \$1.03¼@1.12¼.
May, 1901, delivery, \$1.13@—c.
Wednesday, at regular noon session of Call Board, December, 1900, wheat sold at \$1.10¼@1.12¼; May, 1901, —@—.

California Milling.....\$1 00 @1 07¼
Cal. No. 1 shipping, alongside..... 97¼@1 00
Oregon Valley..... 97¼@1 05
Washington Blue Stem..... 1 00 @1 07¼
Washington Club..... 95 @1 02½
Of qualities wheat..... 90 @ 95

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1898-99.	1899-1900.
Liv. quotations.....	-s-d@-s-d	6s3¼d@6s4¼d
Freight rates.....	30@32½s	40@—s
Local market.....	\$1 06¼@1 08¼	97¼c@1 00

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

Taking into account the amount of wheat and flour on hand at the beginning of the season, the amount on hand at the end of the season, and the amount received from points outside the State, the exportable surplus of California for the past twenty-one years appears as follows in short tons:

1899.....	653,571	1888.....	600,653
1898.....	37,986	1887.....	546,635
1897.....	603,766	1886.....	776,638
1896.....	630,732	1885.....	463,708
1895.....	449,172	1884.....	1,193,808
1894.....	368,915	1883.....	711,285
1893.....	662,506	1882.....	776,788
1892.....	735,764	1881.....	755,682
1891.....	784,425	1880.....	1,380,000
1890.....	628,382	1879.....	1,290,400
1889.....	958,225		

FLOUR.

Values in this market show no change

for the better. The local combine has been lately doing some sharp cutting in prices, without giving official notice of any reduction. The combine is quick to notify the public of advances in price of flour, but not of declines. While the papers have been quoting \$3.75 per barrel, the best flour has been selling at \$3.50, and a discount granted buyers at this figure.

Superfine, lower grades.....	\$3 25@2 50
Superfine, good to choice.....	2 50@2 80
Country grades, extras.....	3 00@3 25
Choice and extra choice.....	3 25@3 50
Fancy brands, jobbing.....	3 50@3 65
Oregon, Bakers' extra.....	2 75@3 10
Washington, Bakers' extra.....	2 75@3 25

BARLEY.

Trade in this cereal has been of a slow order most of the week under review. Although prices are at a low range, and are unprofitable for most producers, buyers are operating slowly and in the majority of instances are confining their purchases to most immediate needs. There is entirely too much barley offering at present, in the face of the light local and foreign demand, for a healthy or firm market.

Feed, No. 1 to choice.....	67¼@ 70
Feed, fair to good.....	62¼@ 65
Brewing, No. 1 to choice.....	75 @ 80
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

Aside from the inquiry on Government account, there was no active demand for this cereal. Prices have not shown special change, but for other than choice to select the market was not firm. While high grade oats were not in large stock, few were wanted at full figures current on same. New crop California Reds are arriving in moderate quantity. According to latest advices, the outlook in Oregon and Washington was for a good yield.

White Oats, fancy feed.....	1 23¼@1 25
White, good to choice.....	1 12¼@1 20
White, poor to fair.....	1 05 @1 10
Gray, common to choice.....	1 02¼@1 12¼
Milling.....	1 15 @1 25
Surprise, good to choice.....	1 20 @1 30
Black Russian.....	95 @1 07¼
Red.....	95 @1 17¼

CORN.

The general condition and quotable rates of this market have not varied materially since last review. Offerings of Large White continue more liberal than of any other variety, as compared with the demand. Large Yellow is in fair request. Small Yellow at current rates is not eagerly sought after.

Large White, good to choice.....	1 12¼@1 15
Large Yellow.....	1 15 @1 17¼
Small Yellow.....	1 40 @1 50
Eastern, in bulk (carload lots).....	1 00 @1 11

RYE.

New crop is offering in larger quantity than local demand warrants. Exporters are bidding very low figures.

Good to choice, new.....	87¼@ 92¼
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BUCKWHEAT.

Nothing new to note. This cereal is virtually out of stock and likely will be for several months.

Good to choice.....	2 00 @2 10
Silverskin.....	— @ —

BEANS.

The market is quiet. Although there are no heavy spot stocks, the general tendency of prices is in favor of the buyer. The Southern yield of Limas is estimated at 150,000 to 200,000 sacks or 350 to 400 carloads. The yield of other beans South will be light. Of Small Whites there will likely not be over a quarter crop, this being the principal variety in the Southern Coast section, aside from Limas. The bean yield in the Sacramento river district promises to be large.

Pea, fair to good, 100 lbs.....	3 35 @3 50
Small White, good to choice.....	3 30 @3 40
Lady Washington.....	2 90 @3 05
Butter, small.....	— @ —
Butter, large.....	— @ —
Pinks.....	2 70 @2 90
Bayos, good to choice.....	2 85 @3 00
Reds.....	3 25 @3 75
Red Kidneys.....	— @ —
Limas, good to choice.....	5 25 @5 35
Black-eye Beans.....	3 25 @3 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @2 75
Garbanzos, small.....	2 00 @2 25

Advices by recent mail from New York give the following review of the bean market, prices quoted being per 60-lb. bushel:

It has been rather a quiet trade in State Marrow beans all the week, but offerings have not been at all urgent and prices have shown no change of importance. General sales of choice stock have been at \$2.20, but fancy goods have gone a little higher in exceptional cases. Some confidence is felt in the stability of present prices. Medium have ruled dull and barely steady; \$2.15 asked for best lots, but it has been shaded 2½c in some instances. Pea have had an exceedingly light trade, and late prices were barely

sustained. There has been fairly satisfactory trading in Red Kidney, West Indian exporters taking several hundred barrels. The price has been \$2.12½@2.15 f. o. b., but at the close the outside figure is generally asked, and some holders are not willing to sell at that. The small quantity of White Kidney available has permitted an advance to \$2.30. Further lots of Yellow Eye have sold to Eastern trade at \$2.20. Turtle Soup scarcely more than nominal; few jobbing sales at \$1.65@1.70, but less money would have to be accepted for round lots. Holders of California Lima are asking late prices, and the tone is steady; quotable at \$3.52½@3.55. Only a moderate distributing trade in foreign beans, but the best grades command about former rates. Poor to fair qualities are overabundant and offering at low and irregular rates. Imported round Marrow if here would bring \$1.70@1.75 in bond, but the remaining lots are mostly of the long variety, and these are offering at \$1.60@1.65. Lower advices from the West have weakened the market here for both green and Scotch peas.

DRIED PEAS.

No inquiry at present worth mentioning and virtually no Dried Peas offering. Values remain nominally as before quoted.

Green Peas, California.....	2 20 @2 35
Niles Peas.....	2 00 @2 25

WOOL.

The market continues quiet, and, owing to the prevailing dullness, values are poorly defined. A little more business is reported in Eastern centers, and it is probable that as soon as there is some noteworthy activity developed on the Atlantic side, the market here will speedily show a change for the better as regards movement. Most of the Eastern manufacturers have not been running their machinery worth mentioning thus far the current season, but some of them are now commencing to resume operations. This week's Panama steamer carried 290,300 lbs. grease wool for New York.

SPRING.

Humboldt and Mendocino.....	18 @20
Northern, free.....	15 @17
Northern, defective.....	12 @14
Middle Counties, free.....	15 @17
Middle Counties, defective.....	12 @14
Southern Mountain, 12 mos.....	10 @12
Southern Mountain, free, 7 mos.....	11 @13
Southern Mountain, defective, 7 mos.....	10 @12
Oregon Valley, fine.....	19 @21
Oregon Valley, coarse to medium.....	18 @19
Eastern Oregon, choice.....	16 @17
Eastern Oregon, fair to good.....	12 @15
Nevada, as to condition.....	15 @17

HOPS.

This market is in what might be termed between the hay and grain period, and there is not likely to be much of anything done, outside of a little contracting, for several months to come. The hops of last crop now offering are mostly too poor to be sought after. The contract figures on favorite marks of new to arrive remain quotable at 9@10c.

Good to choice, 1899 crop.....	7 @10
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The following report of the hop market is from a New York authority, the review having been published under late date, and coming through by mail:

While the improvement in the trade is not at all marked, there has been some enlargement of the demand, and this has given the market a slightly firmer tone. The inquiry has been chiefly from brewers, some of whom are evidently convinced that prices will not go any lower on this crop and that it is safe to make such purchases as their needs require. Between dealers there is little or nothing doing, and those who are light in stock have to rely on getting fresh supplies from the Pacific coast, from whence practically all of the present arrivals are coming. For the very finest lots 13c is about the top selling price, but a few growths are held a little higher, say 13½c. These are quite exceptional, however. Some medium to primo grades are offering at 10@12c, and low grade State and Pacific are obtainable at 7@8c. A few unsound Oregonians can be had cheaper, but this is not merchantable stock. Latest reports from the interior of this State indicate that the vines have made good progress this week. The young yards are said to be looking well, but many of the old yards are weak. Cable advices from the English markets are quite firm, with a fairly satisfactory demand for the season of year.

HAY AND STRAW.

Old hay continues most in favor, stable kinds commanding very steady figures. An occasional sale of very select Wheat hay is made at an advance on quotable rates. For cow hay the market shows weakness. New Wheat and Volunteer Oat hay is beginning to receive a little more attention, but prices remain at a low range. The prospects are good, however, for choice hay selling to better advantage as the season advances.

NEW HAY.

Wheat.....	7 00@ 8 50
Oat, fair to good.....	5 00@ 6 50

OLD HAY.

Wheat.....	6 50@10 00
Wheat and Oat.....	6 00@ 9 00
Oat.....	6 00@ 8 00
Barley.....	5 00@ 7 00
Alfalfa.....	5 03@ 7 00
Stock.....	5 00@ 6 00
Compressed.....	6 50@ 9 50
Straw, ½ bale.....	25 @ 37½

MILLSTUFFS.

Much the same condition has prevailed in this market as during previous week. There were no noteworthy changes in quotable rates. Supplies of most kinds were ample for immediate needs.

Bran, ½ ton.....	12 50@13 00
Middlings.....	15 00@18 00
Shorts, Oregon.....	13 00@15 00
Barley, Rolled.....	15 00@15 50
Cornmeal.....	24 50@25 00
Cracked Corn.....	25 00@26 00

SEEDS.

Stocks of all descriptions quoted herewith are of such insignificant volume that there is no opportunity to do any business worthy of detailed mention. The quotations given are based mainly on jobbing prices.

Mustard, Trieste.....	Per ctt. —@—
Mustard, Yellow.....	—@—
Flax.....	—@—
Canary.....	Per lb. 3¼@ 4
Rape.....	2 @ 3
Hemp.....	4 @ 4½
Timothy.....	4 @ 4½
Alfalfa, Utah.....	—@—

BAGS AND BAGGING.

Inquiry for Grain Bags is moderately active, with values steady at the figures current for several weeks past. Fruit Sacks are beginning to come into request and will likely be in fairly active demand in the near future. In quotable values there are no changes. Other bags and bagging are quiet at the rates noted.

Calcutta Grain Bags, buyer June-July.....	—@—
Calcutta Grain Bags, spot.....	6¼@ 6½
San Francisco Grain Bags, 22x36, spot.....	6¼@ 6½
State Prison Bags in lots of 2000, ½ 100.....	5 65@—
Wool Sacks, 4 lbs.....	—@32½
Wool Sacks, 3½ lbs.....	—@28½
Fleece Twine.....	7¼@—
Gunnies.....	—@12¼
Bean Bags.....	4½@ 5¼
Fruit Sacks, cotton.....	6¼@ 7¼

HIDES, PELTS AND TALLOW.

Market shows weakness throughout, with tendency of prices to lower levels. Values are relatively higher here than in Eastern centers, and with no prospects of immediate improvement on the Atlantic side, further reductions in quotations are likely to be soon experienced here.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	9¼	8¼
Medium Steers, 48 to 56 lbs.....	8¼	7¼
Light Steers, under 48 lbs.....	8¼	7¼
Heavy Cow Hides, over 50 lbs.....	8¼	7¼
Light Cow Hides, under 50 lbs.....	8¼	7¼
Wet Salted Kip.....	9	8
Wet Salted Veal.....	9	8
Wet Salted Calf.....	10	9
Dry Hides.....	17	14
Dry Kip and Veal, 11 to 16 lbs.....	16	12
Dry Calf, under 4 lbs.....	18	15
Salted Horse Hides, large.....	2 00 @	—
Salted Horse Hides, medium.....	1 50 @	—
Salted Horse Hides, small.....	1 00 @	—
Dry Horse Hides, large.....	1 75 @	—
Dry Horse Hides, small.....	75 @1 00	—
Dry Colts' Hides.....	50 @ 75	—
Pelts, long wool, ½ skin.....	1 00 @1 25	—
Pelts, medium, ½ skin.....	70 @ 90	—
Pelts, short wool, ½ skin.....	35 @ 60	—
Pelts, shealing, ½ skin.....	20 @ 35	—
Deer Skins, best summer.....	27½@ 30	—
Deer Skins, good medium.....	27 @ 22¼	—
Deer Skins, thin winter.....	— @ 10	—
Elk Hides.....	10 @ 12	—
Tallow, good quality.....	4¼@ 4½	—
Tallow, No. 2.....	3¾@ 4	—
Goat Skins, perfect.....	30 @ 37½	—
Goat Skins, damaged.....	10 @ 20	—
Kid Skins.....	5 @ 10	—

HONEY.

Spot supplies continue of light volume, and admit of only a small jobbing business. Trade is mostly on local account and at generally better prices than could be realized for export. Former quotations for Comb are continued, but are lower for Extracted.

Extracted, White Liquid.....	6¼@ 7
Extracted, Light Amber.....	5¼@ 6
Extracted, Amber.....	5¼@ 5½
White Comb, 1½ frames.....	12 @12¼
Amber Comb.....	8 @10

BEESWAX.

Market shows the same firm tone as for some time past, with no likelihood of being very soon any more favorable to buyers.

Good to choice, light, ½ lb.....	26 @27
Dark.....	24 @26

LIVE STOCK AND MEATS.

Values for Beef ruled steady, but demand was not brisk. Mutton was in moderate request at former rates. Neither Veal nor Lamb were in excessive receipt. Hogs brought much the same figures as preceding week.

Beef, first quality, dressed, net $\frac{1}{2}$ lb.....	6 @ $\frac{1}{2}$
Beef, second quality.....	5 $\frac{1}{2}$ @ $\frac{1}{2}$
Beef, third quality.....	5 @ $\frac{1}{2}$
Mutton—ewes, $\frac{1}{2}$ @ 7c; wethers.....	7 @ $\frac{1}{2}$
Hogs, hard grain fed, medium.....	5 $\frac{1}{2}$ @ $\frac{1}{2}$
Hogs, small, fat.....	5 $\frac{1}{2}$ @ $\frac{1}{2}$
Hogs, large, hard.....	5 $\frac{1}{2}$ @ $\frac{1}{2}$
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 $\frac{1}{2}$ @ $\frac{1}{2}$
Hogs, country dressed.....	6 @ $\frac{1}{2}$
Veal, small, $\frac{1}{2}$ lb.....	8 @ $\frac{1}{2}$
Veal, large, $\frac{1}{2}$ lb.....	7 @ $\frac{1}{2}$
Lamb, spring, $\frac{1}{2}$ lb.....	8 @ $\frac{1}{2}$

POULTRY.

Market for most kinds of poultry was weak and slow, and is not likely to materially improve during the next three or four weeks, owing to the very limited demand in consequence of warm weather and the more than ordinarily heavy exodus of city people this season to the various summer resorts.

Turkeys, dressed, $\frac{1}{2}$ lb.....	— @ —
Turkeys, live hens, $\frac{1}{2}$ lb.....	12 @ 13
Turkeys, live gobblers, $\frac{1}{2}$ lb.....	9 @ 10
Hens, California, $\frac{1}{2}$ dozen.....	4 00 @ 5 00
Roosters, old.....	3 50 @ 4 00
Roosters, young (full-grown).....	4 50 @ 5 50
Fryers.....	3 50 @ 4 00
Broilers, large.....	3 00 @ 3 50
Broilers, small.....	1 75 @ 2 25
Ducks, old, $\frac{1}{2}$ dozen.....	3 50 @ 4 50
Ducks, young, $\frac{1}{2}$ dozen.....	3 50 @ 4 50
Geese, $\frac{1}{2}$ pair.....	1 00 @ 1 25
Goslings, $\frac{1}{2}$ pair.....	1 00 @ 1 25
Pigeons, old, $\frac{1}{2}$ dozen.....	1 25 @ 1 50
Pigeons, young.....	1 00 @ 1 25

BUTTER.

Market for fresh product has been more quiet and lacked the buoyancy of a week or two preceding, the last quoted advance having checked the demand materially and diverted some trade to cold storage and packed butter.

Creamery, extras, $\frac{1}{2}$ lb.....	19 @ —
Creamery, firsts.....	18 $\frac{1}{2}$ @ —
Creamery, seconds.....	18 @ —
Dairy, select.....	18 @ —
Dairy, seconds.....	17 @ 17 $\frac{1}{2}$
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 15
Creamery in tubs.....	19 @ 21
Pickled Roll.....	18 @ 20
Flrkin, California, choice to select.....	19 @ 21
Flrkin, common to fair.....	17 @ 18

CHEESE.

The demand has been a little slower than for some weeks preceding, both for shipment and on local account, causing a slightly easier tone to prevail, but at the same time there has been no appreciable change in quotable values.

California, fancy flat, new.....	9 $\frac{1}{2}$ @ —
California, good to choice.....	8 $\frac{1}{2}$ @ 9
California, fair to good.....	8 @ 8 $\frac{1}{2}$
California Cheddar.....	— @ —
California, "Young Americas".....	9 $\frac{1}{2}$ @ 10 $\frac{1}{2}$

EGGS.

There were only moderate arrivals of choice to select fresh, but the demand was not very brisk at the last quoted advance. While prices remained much the same as preceding week, for other than most select the market was weak. Demand will be light for about a month. After that stiffer prices may be anticipated for best qualities.

California, select, large, white and fresh.....	18 @ —
California, select, irregular color & size.....	16 @ 17
California, good to choice store.....	13 $\frac{1}{2}$ @ 15
Eastern, as to section and grading.....	14 @ 17
Eastern, cold storage.....	— @ —

VEGETABLES.

With Yellow onions now in fair receipt, Red are in poor favor and are selling at rather low figures. Market for Yellow onions was more favorable to buyers than during preceding week. Market for other vegetables developed no pronounced or especially noteworthy changes. Most kinds in season were in ample supply for current needs.

Asparagus, $\frac{1}{2}$ box.....	1 00 @ 2 00
Beans, String, $\frac{1}{2}$ lb.....	4 @ 5
Beans, Wax, $\frac{1}{2}$ lb.....	4 $\frac{1}{2}$ @ 5 $\frac{1}{2}$
Cabbage, choice garden, $\frac{1}{2}$ 100.....	40 @ —
Cauliflower, $\frac{1}{2}$ dozen.....	50 @ —
Cucumbers, Bay, $\frac{1}{2}$ box.....	1 00 @ 1 25
Egg Plant, $\frac{1}{2}$ lb.....	4 @ 6
Garlic, $\frac{1}{2}$ lb.....	3 @ 4
Green Corn, $\frac{1}{2}$ sack.....	1 00 @ 1 50
Green Corn, Alameda, $\frac{1}{2}$ crate.....	1 75 @ 2 25
Onions, Red, Cal., good to choice.....	40 @ 60
Onions, Yellow Danver, $\frac{1}{2}$ cental.....	80 @ 90
Peas, Sweet, garden, $\frac{1}{2}$ lb.....	2 @ 2 $\frac{1}{2}$
Peas, Green, $\frac{1}{2}$ sack.....	1 00 @ 1 25
Peppers, Green Chile, $\frac{1}{2}$ lb.....	12 $\frac{1}{2}$ @ 15
Peppers, Bell, $\frac{1}{2}$ lb.....	— @ —
Rhubarb, $\frac{1}{2}$ box.....	50 @ 75
Squash, Summer, $\frac{1}{2}$ large box.....	75 @ 1 00
Tomatoes, $\frac{1}{2}$ small box.....	75 @ 1 25
Tomatoes, River, $\frac{1}{2}$ large box.....	1 75 @ 2 00

POTATOES.

Much the same slow and unsatisfactory market has been experienced the current week for both Old and New potatoes as was noted in previous report. Although

there were no heavy receipts or offerings, supplies were sufficiently ahead of the demand to cause a weak tone to prevail. In a small way, desirable Old for seed sold to fair advantage.

Burbanks, River, $\frac{1}{2}$ cental.....	40 @ 80
Burbanks, Bay counties, $\frac{1}{2}$ cental.....	50 @ 85
Burbanks, Humboldt.....	— @ —
Burbanks, Oregon.....	60 @ 90
River Reds.....	— @ —
Early Rose.....	— @ —
Garnet Chile.....	— @ —
New Potatoes, $\frac{1}{2}$ cental.....	40 @ 85
Sweet, River, $\frac{1}{2}$ cental.....	— @ —
Sweet, Merced.....	— @ —

The Fruit Market.

FRESH FRUITS.

While the market was not very heavily supplied with choice fruit of any description, there was plenty of common stock, much of it being in baskets from Sacramento river section, and for this latter sort the market was weak. Cherries were in reduced receipt and brought better average prices than for a fortnight or more preceding, although where canners had to be depended on for a market, generally unchanged and low figures had to be accepted. Apricots ruled fairly steady. Choice Apples were scarce; of poor there were entirely too many. Outside quotation is for wrapped. Peaches and Plums were in lighter supply and market presented a little better tone. No strictly choice Peaches have yet arrived, but will be soon coming forward. Figs were more plentiful and lower. A few Grapes in fine condition brought good prices, but demand for them at extreme rates was not brisk. Gooseberries were scarce and not quotable. Most other berries in season were in liberal receipt and cheap.

Apples, fancy, 4-tier box.....	— @ —
Apples, good to choice, $\frac{1}{2}$ 50-lb box.....	50 @ 1 00
Apples, common to fair, $\frac{1}{2}$ 50-lb box.....	30 @ 40
Apricots, Royal, $\frac{1}{2}$ crate.....	40 @ 65
Apricots, Royal, $\frac{1}{2}$ box.....	35 @ 60
Cherries, Royal Anne, $\frac{1}{2}$ box.....	40 @ 65
Cherries, Black Tartarian, $\frac{1}{2}$ box.....	35 @ 50
Cherries, White and Red, $\frac{1}{2}$ box.....	25 @ 50
Cherries, in bulk, $\frac{1}{2}$ lb, Royal Anne, 4 @ 5c; Black Tartarian, 3 @ 4c; Red and White, 2 $\frac{1}{2}$ @ 3 $\frac{1}{2}$ c.....	— @ —
Gooseberries, common, $\frac{1}{2}$ lb.....	— @ —
Gooseberries, English, $\frac{1}{2}$ lb.....	— @ —
Grapes, Thompson's Seedless, $\frac{1}{2}$ crate.....	1 40 @ 1 50
Raspberries, $\frac{1}{2}$ chest.....	3 50 @ 5 00
Blackberries, $\frac{1}{2}$ chest.....	2 50 @ 4 00
Logan Berries, $\frac{1}{2}$ chest.....	4 00 @ 5 50
Plums, ordinary varieties, $\frac{1}{2}$ box.....	30 @ 60
Tragedy Prunes, $\frac{1}{2}$ crate.....	75 @ 90
Currents, Red, $\frac{1}{2}$ chest.....	2 50 @ 4 00
Peaches, $\frac{1}{2}$ box.....	40 @ 75
Pears, Bartlett, $\frac{1}{2}$ box.....	1 25 @ 1 50
Pears, common kinds, $\frac{1}{2}$ box.....	25 @ 35
Figs, Black, $\frac{1}{2}$ double layers.....	50 @ 75
Figs, single layer box.....	35 @ 50
Strawberries, Longworth, $\frac{1}{2}$ chest.....	4 00 @ 6 00
Strawberries, Large, $\frac{1}{2}$ chest.....	2 50 @ 4 00

DRIED FRUITS.

The market for cured and evaporated fruits is not showing much life at present, either as regards spot stocks or contracts for future deliveries. New Apricots are being offered rather freely for this early date, mainly from Vacaville section, but little or none of the fruit thus far received is of very high grade, which is customary with earliest consignments. Quotations have been reduced to 6 $\frac{1}{2}$ @ 7c., being a cent under opening figures, but the rates quoted only cover values on stock now offering and do not include select or fancy. Indications are that the market will not be burdened with strictly high grade Apricots, and such should command this season more than the ordinary premium over common to medium qualities. New Peaches to arrive are being offered by operators at 5 $\frac{1}{2}$ @ 6 $\frac{1}{2}$ c. for good to choice unbleached, in carload lots at primary points, August delivery. This is probably largely a bluffing proposition, as a better opportunity than at present was never presented in the dried fruit market for those interested in bearing values to play a bluff game. There are no signs of inclination at present on the part of either Eastern or local wholesalers or jobbers to buy future deliveries of any fruit. Prices named for Pears for future deliveries are at much the same range as now nominally current on small stocks remaining of last year's product. Apples sliced, evaporated and sun-dried, continue to drag, and quotations for same have suffered a further decline. Quartered Apples are in light stock and in a small way are commanding comparatively good prices. The Prune market is quiet at quotably unchanged values, with principal holdings closed out, present offerings being confined almost wholly to small outside lots, and when the latter are not fully up to the regulation standard, they are being offered at concessions from full current quotations.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, $\frac{1}{2}$ lb.....	6 $\frac{1}{2}$ @ 7
Apricots, Royal, fancy.....	— @ —
Apricots, Moorpark.....	— @ —
Apples, in 50-lb boxes, rings, pressed, fancy.....	5 $\frac{1}{2}$ @ 5 $\frac{1}{2}$
Apples, 50-lb boxes, rings, pressed, good to choice.....	4 @ 4 $\frac{1}{2}$

Flgs, White, fancy pressed.....	5 $\frac{1}{2}$ @ 3 $\frac{1}{2}$
Peaches, unpeeled, good to choice.....	4 @ 5
Peaches, unpeeled, fancy.....	6 $\frac{1}{2}$ @ 7 $\frac{1}{2}$
Peaches, peeled, in boxes.....	12 @ 15
Pears, unpeeled Bartletts, halved, fancy.....	9 @ 9 $\frac{1}{2}$
Pears, halved, unpeeled Bartletts.....	6 $\frac{1}{2}$ @ 7 $\frac{1}{2}$
Pears, quartered, unpeeled Bartletts.....	6 $\frac{1}{2}$ @ 7 $\frac{1}{2}$
Plums, Black, pitted.....	6 $\frac{1}{2}$ @ 7 $\frac{1}{2}$
Plums, White and Red.....	7 @ 8
Prunes, in sacks 40—50s.....	4 @ 4 $\frac{1}{2}$
50—60s.....	3 $\frac{1}{2}$ @ 3 $\frac{1}{2}$
60—70s.....	3 $\frac{1}{2}$ @ 3 $\frac{1}{2}$
70—80s.....	2 $\frac{1}{2}$ @ 3
Prunes in boxes, $\frac{1}{2}$ higher for 25-lb boxes, $\frac{1}{4}$ higher for 50-lb boxes.....	— @ —
4 sizes Santa Claras and equal.....	— @ —
4 sizes San Joaquin and Northern.....	— @ —
Prunes, Silver.....	4 @ 6

COMMON SUN-DRIED.

Apples, sliced.....	3 @ 3 $\frac{1}{2}$
Apples, quartered.....	3 $\frac{1}{2}$ @ 4 $\frac{1}{2}$
Figs, Black.....	2 @ 3
Figs, White.....	3 @ 3 $\frac{1}{2}$
Peaches, unpeeled.....	3 @ 4

Recent advices by mail from New York furnish the following report of the dried fruit market in the East:

Demand for evaporated apples has been light, and with some pressure to realize market has ruled weak and declining. Fancy and choice grades have met a light jobbing demand at about former prices, but prime have eased off to 5 $\frac{1}{2}$ @ 5 $\frac{3}{4}$, rarely 5 $\frac{3}{4}$ c for very attractive stock, and poorer quality is almost entirely neglected. Sun-dried apples have little attention and continue weak at the lower figures ruling. Choice heavy packed chops might exceed quotation, but the reduced figures cover most business, and cores and skins sell generally at 75c. Raspberries and cherries both weak, with outside figures extreme. California fruit quiet and easy.

Apricots, Cal., Moorpark, $\frac{1}{2}$ lb.....	14 @ 16
Apricots, Cal., Royal, $\frac{1}{2}$ lb.....	12 $\frac{1}{2}$ @ 13 $\frac{1}{2}$
Peaches, Cal., peeled, $\frac{1}{2}$ lb.....	16 @ 20
Peaches, Cal., unpeeled, in bxs, $\frac{1}{2}$ lb.....	7 @ 8 $\frac{1}{2}$
Peaches, Cal., unpeeled, in bags, $\frac{1}{2}$ lb.....	6 @ 8
Prunes, Cal., $\frac{1}{2}$ lb.....	4 @ 7

RAISINS.

Beyond the closing out of holdings in second hands, mostly small parcels, which are going at generally easy figures, with-out regard to cost or official card rates, there is nothing to report in the way of business. Existing conditions promise a fairly liberal yield of coming crop, but it is the understanding that the pack will be restricted to probable requirements.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, $\frac{1}{2}$ box.....	1 60 @ —
do do 2-crown, $\frac{1}{2}$ box.....	1 50 @ —
Valencia Layers, $\frac{1}{2}$ 20-lb box.....	80 @ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6 $\frac{1}{2}$ @ —
Loose Muscatel, seedless.....	5 @ —
Pacifics.—2-crown loose Muscatel, 5 $\frac{1}{2}$ c; 3-crown, 6c; 4-crown, 6 $\frac{1}{2}$ c; seedless, 4 $\frac{1}{2}$ c.....	— @ —
Oriental.—2-crown loose Muscatel, 4 $\frac{1}{2}$ c; 3-crown, 5 $\frac{1}{2}$ c; 4-crown, 6c.....	— @ —

(Above prices for loose raisins are for 50-lb boxes.)

Thompson Seedless.—Bleached fancy, $\frac{1}{2}$ lb, 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.....	— @ —
Sultanas.—Bleached fancy, $\frac{1}{2}$ lb, 8 $\frac{1}{2}$ c; choice, 7 $\frac{1}{2}$ c; standard, 6 $\frac{1}{2}$ c; prime, 5c. Unbleached, 5c.....	— @ —
Loose Valencias.—Fancy, $\frac{1}{2}$ lb, 5 $\frac{1}{2}$ c; choice, 4 $\frac{1}{2}$ c; standard, 3 $\frac{1}{2}$ c.....	— @ —
Valencia Clusters.—Fancy, $\frac{1}{2}$ lb, 7c; choice, 6c; standard, 5c.....	— @ —

CITRUS FRUITS.

Orange market is quiet, as is generally the case at this late date. Especially desirable shipping qualities command in a limited way comparatively stiff prices. Lemons of high grade, thoroughly sweated and in every way desirable, are in fair request at full current rates, but common qualities continue slow of sale at low figures. Limes remain quotably unchanged, supplies being equal to current requirements.

Oranges—Navels, fancy $\frac{1}{2}$ box.....	— @ —
Navels, good to choice.....	1 50 @ 2 50
Navels, common to fair.....	1 25 @ 1 50
St. Valencias.....	2 00 @ 3 25
St. Michaels.....	2 00 @ 3 00
Mediterranean Sweet.....	1 00 @ 2 50
California Seedlings.....	1 00 @ 1 75
Lemons—California, select, $\frac{1}{2}$ box.....	2 25 @ 2 50
California, good to choice.....	1 50 @ 2 00
California, common to fair.....	75 @ 1 25
Limes—Mexican, $\frac{1}{2}$ box.....	4 00 @ 4 50
California, small box.....	50 @ 1 00

NUTS.

There is virtually nothing doing in the spot market of either Almonds or Walnuts. There are no offerings of either sort worth mentioning. The coming crop of both kinds promises to be larger and better than last season. Almonds will probably meet with brisk demand, owing to light yield abroad. Peanuts are commanding steady prices.

California Almonds, shelled.....	14 @ 17
California Almonds, paper shell, $\frac{1}{2}$ lb.....	10 @ 12
California Almonds, soft shell.....	8 @ 9
California Almonds, hard shell.....	4 @ 5
Walnuts, White, soft shell.....	9 @ 10
Walnuts, White, California, standard.....	7 @ 8
Chestnuts, California Italian.....	8 @ 10
Peanuts, California, fair to prime.....	5 @ 6
Peanuts, Eastern, hand-picked.....	6 @ 6 $\frac{1}{2}$
Pine Nuts.....	5 @ 6

WINE.

There are no changes to note in the local wine market, either in general tone or in quotable rates. Most of last season's

wine is now out of producers' hands. The wholesale market for dry wines of 1899 vintage remains quotable at 14 @ 16c per gallon for good to choice, with sales of select up to 20c, the latter figure being realized only in a small way, and as a rule the transfers being confined to stock of very superior quality. The movement of wine outward is of fair volume, both overland and by sea. Monday's Panama steamer carried 148,426 and 35 cases, the major portion, 145,238 gallons, being for New York.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{4}$ sacks.....	135,815	6,303,498
Wheat, centals.....	176,417	6,888,558
Barley, centals.....	38,845	5,028,573
Oats, centals.....	8,585	785,944
Corn, centals.....	3,595	149,791
Rye, centals.....	3,960	105,102
Beans, sacks.....	233	364,536
Potatoes, sacks.....	17,744	1,219,284
Onions, sacks.....	2,214	168,877
Hay, tons.....	2,421	152,187
Wool, bales.....	3,050	59,386
Hops, bales.....	10,638	11,704

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, $\frac{1}{4}$ sacks.....	127,644	4,250,086
Wheat, centals.....	260,951	6,245,314
Barley, centals.....	5,435	3,875,642
Oats, centals.....	856	46,557
Corn, centals.....	1,324	21,933
Beans, sacks.....	486	26,907
Hay, hales.....	934	138,720
Wool, pounds.....	139,440	4,463,873
Hops, pounds.....	24,947	1,102,653
Honey, cases.....	2	3,583
Potatoes, packages.....	616	73,178

California Dried Fruit at New York.

NEW YORK, June 20. — Evaporated apples, common, 4 $\frac{1}{2}$ @ 5c; prime wire tray, 5 $\frac{1}{2}$ @ 6c; choice, 6 $\frac{1}{2}$ @ 7c; fancy, 7 $\frac{1}{2}$ @ 8c. California dried fruits quiet, with easy tone to the market.

Prunes, 3 $\frac{1}{2}$ @ 7c.
Apricots, Royal, 12 $\frac{1}{2}$ @ 14c; Moorpark, 15 @ 18c.
Peaches, unpeeled, 6 @ 9c; peeled, 16 @ 20c.

FREDERICK MAURER, 22 yrs. with Western Sugar Refining Co. W. C. BARNARD, 18 yrs. with H. DUTARD.

W. C. BARNARD & CO.,
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THE OLD RELIABLE REMEDYFor Spavins, Ringbones, Splints, Curbs,
etc., and all forms of Lameness.

Certain in its effects and does not blemish or blister.

Holstein, Iowa, Feb. 19, 1898.
Dear Sir:—Please send me one of your Treatise on the Horse. I have a mare that had a Ringbone. I used one bottle of Kendall's Spavin Cure, after I used it two weeks my horse got well. I think it is the best medicine in the world for horses. Yours truly, GUSTAVE PAULSEN.
Price, \$1; six for \$5. As a Liniment for family use it has no equal. Ask your Druggist for Kendall's Spavin Cure, also "A Treatise on the Horse," the book free, or address
DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

THE VETERINARIAN.**The Fatal Effect of Green Sorghum.**

By R. S. HILTNER in Bulletin 63 of the Nebraska Experiment Station

Sorghum is rapidly coming into favor as a forage crop. Owing to the large yields obtainable and to its high feeding value, stockmen are beginning to depend upon this crop for fodder and for roughage.

As a forage crop sorghum is not entirely free from objectionable features. Fatalities in herds pastured on the growing cane are frequently reported. An examination of the station's letter files shows that the increased use of this crop for forage there has followed an increase in the number of fatal cases. The number of cattle lost from this cause in the State during the past year has been large. The exact figures cannot be given; 144 fatal cases were reported, but unquestionably this represents only a small proportion. At Imperial ten cattle out of a herd of thirty-two died suddenly. At Culbertson eleven cattle died within an hour from eating cane. At Wauneta a stockman reports the loss of seven out of a small herd. The cattle all died in a very short time after entering the pasture. Many other cases of this sort might be cited, but these suffice to show the prevalence of the disease as well as the serious nature of it.

The present work was undertaken with a view of ascertaining, if possible, the cause of this occasional deleterious action of sorghum. It is hoped that what is said herein will not prejudice any one against the crop nor deter any one from planting it this spring. The fact must be borne in mind that this injurious or fatal effect of sorghum manifests itself only occasionally. These cases in fact are the exceptions rather than the rule. In proportion to the number of cattle fed on sorghum last year the number of fatalities resulting was really very small. Even this number might unquestionably have been diminished if greater caution had been exercised in supplying the feed.

The true reason for the fatal effect of sorghum is not known. Of late it has been the subject of a great deal of speculation and controversy. The explanations frequently offered seem to be based largely on conjecture rather than upon any thorough study of the facts.

Cattlemen frequently object to sorghum for forage on the ground that it causes bloat. Undoubtedly in many cases there is good reason for prejudice against the crop on this account. Records show that many cattle pastured on sorghum have died from such cause. Cane, especially before it matures, is a very succulent sort of forage. Like alfalfa or clover, if fed in large quantities to hungry cattle, bloating is liable to follow. But impaction is not the cause of the death of the cattle in the majority of cases reported this year. Frequently cattle pastured on sorghum die very suddenly. Cases are recorded of animals dying in five minutes after entering the pasture. Such fatalities could not have been caused by bloating.

SEARCHING FOR POISON.—The most common explanation of the fatal effect of sorghum is that the plant under cer-

tain conditions develops a strongly poisonous chemical compound. Many facts seem to warrant such an explanation, and for this reason the Chemical Division at this station undertook to investigate the subject.

The results of the tests for poisonous matter proved negative. The conclusion was therefore forced upon us that there are none of the common known vegetable poison present in sorghum excepting, as already stated, a small quantity of oxalic acid.

It should be borne in mind that the sample analyzed represented sorghum which had caused the death of full-grown cattle in a very short space of time. If the fatalities were due to chemical poisons contained in the plants, these poisons must certainly have been present in large quantities. In the whole category of poisons, there is none so virulent as to kill a steer in ten or fifteen minutes unless the quantity taken be very large. For this reason alone it was considered unnecessary to resort to elaborate and refined methods for identifying minute traces of the material.

THE EFFECT OF SECOND GROWTH CANE.—The opinion seems to be widespread that it is the second growth only that is dangerous and exhibits this toxic effect, and that the first growth may be fed with impunity. Dr. Pritchard states that "the second growth of sorghum under certain conditions is very destructive to cattle, small quantities killing them almost instantly. Just what this destructive agent is I am not able to say." Individuals are doubtless justified in drawing such conclusions from the results of their own experiences, but if a number of cases be considered, it may be seen that this is not invariably the rule. In many of the letters received mention is made of the fact that cattle have died from eating first growth cane, and on the other hand numerous instances have come under observation of cattle eating to their fill of second growth without being injured in the least. Such contradictory evidence as this proves nothing in regard to the poisonous qualities in general, but points to the fact simply that the first crop may not always be fed freely with safety, and that the second growth is not always injurious. It is probable that in most cases where fatalities have occurred from feeding the second crop that death was caused by bloat. In a wet season this second growth springs up quickly, affording a very tender, succulent pasturage. Cattle turned onto such a pasture are very liable to gorge themselves.

It must be admitted that in the majority of cases recorded it has been the second growth of sorghum that has proved fatal. Whether such fatalities are due to impaction or to some other cause, it is more than probable that the same results would have followed if the same cattle in a similar physical condition had been pastured on the first crop in a similar stage of development. It seems quite improbable that any poisonous principle is developed or stored up in the plant in any particular stage of its growth, and not in any other stage. If a poisonous constituent were not found in the first growth, it is probable that none would be present in the second growth, and vice versa. This statement is in accord with what is known regarding the chemistry of all plants. A poisonous substance that is elaborated in a certain plant may always be found in that growing plant at any stage of its development. For example, in the loco weed is always found a poisonous acid that characterizes the plant, or in the poison ivy the insidious virulent oil is always present. The same is true of the non-poisonous constituents of plant tissues; sugar is always found in the sugar beet, terpenes in the sage plant, etc. In other words the chemical substances, toxic or non-toxic, found in any plant are characteristic of it, and in most cases are inherent and indispensable parts of the plant tissue.

In view of the common practice of cutting the first crop of sorghum for hay and pasturing the second crop, it is not difficult to understand the reason for the prevailing impression regarding

the injurious effect of the second growth. It is very likely that if the unmatured first growth were fed as freely as is the second, the number of cattle affected would be more nearly the same in each case.

CONCLUSIONS.—It must be admitted that positive proof is still lacking regarding the cause of the disease occasionally induced by sorghum plants. Negative results of an analysis are usually not satisfactory, but in this case they are at least quite conclusive. In view of the analyses and of the collateral evidence given, it seems certain that the toxic effect of this plant which manifests itself at times is not due to a chemical poison inherent in the plant and is not peculiar to the second growth alone. This last statement is of special importance. It is in direct contradiction to the prevailing popular opinion, but the facts at hand sustain the conclusion. The proof of this once accepted, and the prejudice against the second growth thereby removed, will result, it is believed, in a greatly increased use of this valuable forage crop. The greater the number of cases studied the more evident it becomes that this is a matter governed entirely by local conditions and that the safety and health of the herd may be controlled to a large measure by the herder himself.

Answers by Dr. Creely.**WHAT NOT TO DO FOR A COW.**

TO THE EDITOR:—I wish your advice pertaining to our cow, which has been sick now for two weeks. She will not eat anything and drinks scarcely any water, and is getting so thin that we are afraid she will die. I have given her salt bacon, flaxseed tea, oil, salts, and to-day I got the cud from a newly slain beef and gave her that, as a butcher recommended it very highly, but nothing seems to help her. The trouble seems to be that she has lost her cud, as in the two weeks she has only had it twice.—M. S., Santa Rosa.

It is impossible to tell what ails her, as no symptoms are described. The treatment already given should kill an ordinary elephant. As I have constantly reiterated, never treat an animal differently than you would a human being. Imagine yourself sick, refusing to eat and drink, and an amateur doctor treating you for an ailment of which he knew nothing, poking salt bacon down your throat, oil and salts, and, worse than all, a cow's cud. Use judgment in treating your animals. Treat them as you would yourself, using the same drugs, but ten times stronger for horses and twelve times stronger for cows.

My advice is to get the nearest qualified veterinarian at once, as the case is too far gone to wait for me to get symptoms and advise treatment.

SWINE PLAGUE.

TO THE EDITOR:—Please write me what to do for hogs affected in the manner described: I have lost over seventy-five fine pigs, from two to three months old, and about twenty-five large hogs. They were all in good condition, and the first symptoms were those of lying around in the shade, want of appetite and a stiffness, some having a cough. I have given them



turpentine, lime, carbolic acid in their drinking water and sulphur and tar in troughs of water, all of which seem to give no relief. I still have sixty-five left which seem all right, although they have all been running together.

Pigs two months old first became blind, then diarrhea and from three days to a week died. Some grown hogs have a cough that lasts all the time of sickness. Some seem stiff and lame, soreness all through the body. On some the hair is coming off. Some have been sick for two weeks and are still about the same; others have been sick but a short time, when they die. They pant very hard about the last day. One that was sick about two weeks and then died, when opened, was found full of abscesses, especially on the intestines. This one was lame, stiff in shoulders and ate little all the time of sickness; was quite fat at beginning of sickness. Some, like the pigs, have a diarrhea.—R. D. B., Lake county.

It is swine plague—a specific septicemia produced by a bacillus which is very small. It is characterized from an anatomical standpoint by a gastro enteritis and hemorrhagic kidney inflammation by a tumefaction of the spleen and parenchymatous inflammation of the liver, heart and voluntary muscles, sometimes confounded with the infectious disease of the pig.

Treatment consists of an emetic at the outset, after which use calomel to purge, 15 to 20 grains; but the prevention is ten times more important than the cure. Healthy animals must be immediately separated from the sick and placed in healthy stables. Thoroughly disinfect pig pens with chloro naphtholeum. It is especially important to destroy the noxious effects of the excrements. Inoculation by Pasteur's virus would be advisable.

A CASE OF TUBERCULOSIS.

TO THE EDITOR:—I have a Holstein cow that has a very bad cough, dry and straining. She is quite thin and does not shed her hair at all; her skin seems to be scaly along her back; she gives quite a lot of milk, but seems to be lifeless and sluggish. If I start her up when she is lying down it starts her to coughing. I do not allow her to run with other cows for fear of it being a contagious disease with the other cows. I have found a great many beneficial receipts through your paper for doctoring cows. Would you kindly advise me what to do for her?—T. A. VARIAN, Ferndale.

A positive case of tuberculosis or consumption.

FOR A HARD SWELLING.

TO THE EDITOR:—My fox terrier has a large, hard lump on the left side of his throat. Can you tell me what to do for it? It appeared quite suddenly a few days ago and does not seem to pain him at all; his health otherwise is quite good, as he eats well and is full of spirit.—A SUBSCRIBER, Alma.

Apply the following once daily, after which poultice, and it will either bring it to a head or disperse it entirely: Tinct. aconite root, 2 drachms; tinct. iodine, 1 ounce. Mix.

PERIODIC OPHTHALMIA.

TO THE EDITOR:—My horse has a scum over her left eye; this eye also is running. Since I have had this horse (Feb. 1, 1900), she had this twice before, however not as long as this time.—A SUBSCRIBER, San Miguel.

This mare has an attack of periodic ophthalmia. Place her in a dark stall for a few days and apply a fly blister above the eye. Bathe several times daily with very salty, warm water, after which inject the following: Zinc sulphate, 6 grains; powdered alum, 12 grains; rose water, 1 ounce. Mix.

The mare will eventually go blind from cataract, after which the other eye may become involved, but the last is not certain. This condition is known among laymen as moon blindness.

E. J. CREELY, D. V. S.
510 Golden Gate Ave., S. F.



Several Kinds of Farmers.

Who is it that pronounces orange growing a failure here, who says he knows what he is talking about for he has tried it, and can give you a long list of the expenses, and show how his shipments left him in debt? We have him here in abundance. You can find him on the porch of the seaside hotel, smoking a fine cigar or flirting with the girls. Or he may be taking a trip back East for fun, or to Europe, and if it is the time of year when the orchard needs most attention, when a slight delay in the application of water may mean many dollars to the acre, he is quite sure to be anywhere but near the orchard.

You can also find another man living near the orchard, and perhaps he takes a stroll once a day down through it. But he is a press-the-button-and-the-Lord-will-do-the-rest farmer. When his returns come in he charges up all the blame to California. You can find him on the street corner demonstrating that there is nothing in farming or fruit growing.

Then we have the remittance rancher, often the black sheep of the family, consigned to us for regeneration. If there is enough left from poker and whisky the ranch may get some of the benefit of it in the shape of fertilizers or more work. And sometimes, when there has been a genuine reformation, the money is often paid out to men who loaf or do bad work while the owner is asleep in the hammock under the porch, dreaming of the next remittance.

Above all we have the man who would work if he knew how, but who never did know how to do anything, and never could show any one else how to do it, or know whether it was being done properly or not. And along with him is the man, like the boy we all knew at college—"smart enough if he would only study," but he will not work himself, and finds standing around to see that others work well is too much like work itself.

These are the men who have done more to make people believe California a fraud than all else together.

And who is the man who has made California?

The man who is not afraid to be seen with a hoe in hand, chasing after the last gopher hole that is taking away the water; often a business man from the East, never brought up to work, and, perhaps, too delicate to do much. A man, perhaps, with plenty of money, who never dreamed of getting into work himself, but who has found that while you are in the field overseeing things it is not only about as easy to work as to stand around, but that you can get a great deal better work out of even the best men by working with them and letting them see that you understand work as well as any one. And he don't have to wait ten years to find out that his trees need fertilizers. He is wide awake to all improvements, attends all the farmers' institutes and horticultural societies, and studies the horticultural journals to see what other people are discovering instead of trying to work out his own salvation with his nose in his own plow furrow.

He is the man who makes big money out of oranges and don't care whether any one believes it or not, the man who has made southern California what it is, the man who farms on the ranch instead of farming by proxy, and farms, too, with a fine-toothed comb.—Los Angeles Herald.

\$100 Reward, \$100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure now known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

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And when you come to try the machines in comparative test—in practical operation—it is easily apparent to anyone that an "Alpha-De Laval" is so superior in thoroughness of separation, in actual capacity, in quality of product, in ease of operation, in mechanical finish and in durability, that any other machine would be dear as a gift.

Hence the sales of "Alpha-De Laval" machines are *ten times* those of all other makes combined and the people who buy other machines are those who do not try for themselves.

A De Laval catalogue or a De Laval agent will be gladly sent anywhere upon application.

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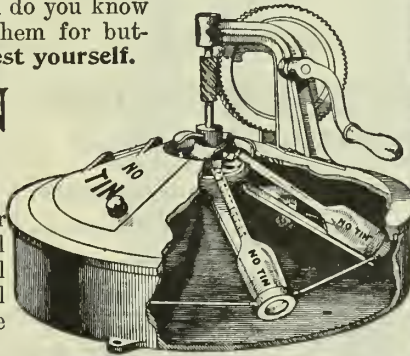
Do they pay you a profit, and do you know how much? Have you tested them for butter fat? You can make the test yourself.

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is made in six-bottle size for farmer's use; it is driven by hand and is substantially built. Will last a life-time; fitted with ball bearings, and it does not rattle and does not wear out.

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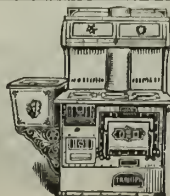
MCCARTHY & MACKAY,

226 MARKET STREET, SAN FRANCISCO, CAL.

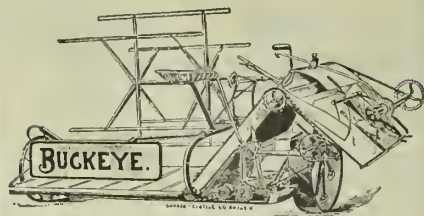
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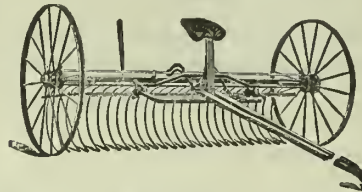
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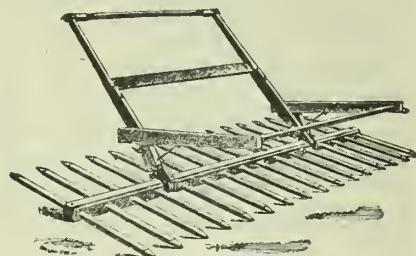
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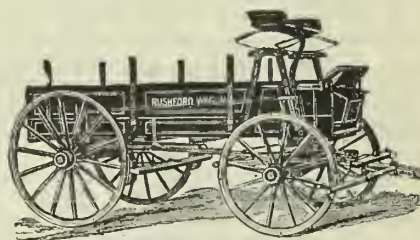
PACIFIC CHAMPION SELF DUMP RAKE.



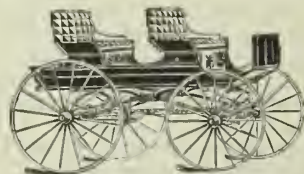
CHAMPION REVOLVING RAKE.



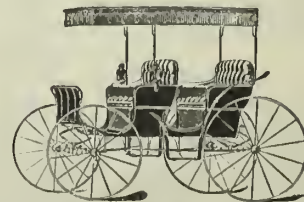
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Patrons of Husbandry.

Tulare Grange Meeting.

TO THE EDITOR:—This Grange held its regular meeting on Saturday. In the absence of Worthy Master Berry, Past Master Shoemaker presided.

After reading minutes of last meeting the secretary reported she had sent copies of Tulare Grange resolutions, on agricultural education in rural public schools, to the State Educational Society, and protesting against the proposed amendment to the constitution, exempting bonds from taxation, to the Worthy Lecturer of the State Grange.

The special committee appointed to consider and report on methods of co-operation in the sale of farm produce and the purchase of supplies asked for further time to report. The National Grange Quarterly Bulletin subject for consideration at the June meeting of subordinate Granges was: "In what way can business co-operation in the manufacture of supplies now purchased, or of products sold, be made available to members of the Grange?"

The secretary read from the PACIFIC RURAL PRESS Worthy State Lecturer Taylor's excellent article on this subject, after which a resolution was passed recommending all Patrons and farmers to so arrange their business as to co-operate in the purchase of their supplies and in the sale of their products.

The lecturer called the attention of members of the Grange to the subjects programmed in the National Grange Quarterly Bulletin for consideration by subordinate Granges at the July, August and September meetings. For July: "What advantage would be gained by farmers by taking a more active interest and participation in local legislation?" For August: "What are the advantages to the young man, expecting to follow farming as a business, in education at our agricultural college?" For September: "What is the farmer's duty in the maintenance of public highways, and should cities and villages contribute to the support of highways leading thereto?"

A committee of three was appointed to prepare papers on the August subject, to be discussed by the Grange at its meeting on the first Saturday in September, and a like committee on the September subject, to be discussed on the third Saturday in September.

The Grange then adjourned until the first Saturday in September. J. T.

Elk Grove Grange.

TO THE EDITOR:—Elk Grove Grange celebrated Children's Day on the regular meeting day, Saturday, June 16. The Grange held session in the forenoon, banquet was served during the hour from 12 to 1 o'clock, the exercises commencing at 2 o'clock. A large audience was present to listen to the long and interesting programme.

Very much credit is due to some of the young members of Elk Grove Grange, who used their best efforts, to make the programme interesting.

PATRON.

THE use of a ram instead of a wind mill for elevating water in country places is made practical by the Rife hydraulic engine; not dependent upon wind or weather for its operation; simple and strong. The manufacturers claim to elevate water 30 feet for every foot of fall in the driving head. The machine is built in capacities as high as 175,000 gallons per day, and an efficiency of 82% is claimed. Write for descriptive and illustrated circulars to Rife Hydraulic Engine Co., New York City.

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HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except list on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds. 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SANE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A. J. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

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WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SANTA TERESA POULTRY FARM, Eden Vale. Santa Clara Co., Cal. Illustrated catalogue and guide free. Agents Eclipse Aluminum Leg Bands and Rabbit Labels.

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BECAUSE they are made on correct principles, therefore give the best results. The Menzel Hardware Co. of Santa Clara, Cal., state that "they have put up a large number of pumps of all kinds this season, but yours give us and our customers the best satisfaction."

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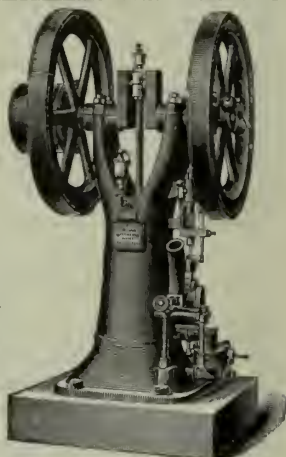
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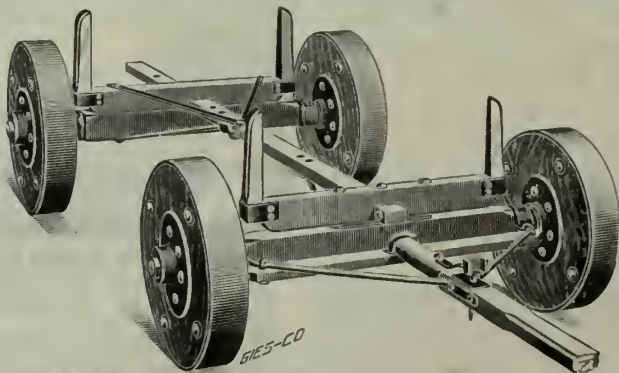
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"CALIFORNIA SPECIAL" FRUIT AND FARM TRUCK.

Steel Wheels, 28 and 30 Inches, 4-in. Tire. Wood Wheels, 28 and 30 Inches, 6-in. Tire.

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Write or Call.

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A Decision on Irrigation Districts.

Attorney-General Ford, according to the Chronicle, has declined to bring an action against the Turlock irrigation district of Stanislaus county for the purpose of determining the validity of the organization of that district, basing his refusal on the ground that the organization, under the Wright Act, was made some twelve years ago, that taxes have been levied and collected, bonds issued and sold and work of magnitude undertaken involving large expenditures, and that, by its long acquiescence, the State has tacitly consented to the exercise of other powers by the district in question. In this connection the Attorney-General says: "No power of the State should be exercised except by the authority of or with the consent of the people. But such consent is not necessarily confined exclusively to express statutory provision. If the consent of the people be unmistakably expressed in some appropriate manner recognized by the law, then there has been no invasion of the sovereignty of the State, but rather an acknowledgment of and obedience to such sovereignty."

The Attorney-General intimates that under the decision of the Supreme Court of California in the recent case of the People vs. Linda Vista Irrigation District, the State is barred from instituting proceedings in quo warranto against an irrigation district after a lapse of two years from the date of organization of such district.

List of U. S. Patents for Pacific Coast Inventors.

REPORTED BY DEWEY, STRONG & CO.,
PIONEER PATENT SOLICITORS
FOR PACIFIC COAST.

FOR THE WEEK ENDING JUNE 5, 1900.

- 650,889.—SWATH CLEANER—H. A. Abbott, Sunol, Cal.
651,289.—WATER COCK—J. P. Benton, Dalles, Or.
651,101.—WATER WHEEL BUCKET—F. R. Brown, Unga, Alaska.
651,104.—ENVELOPE—W. H. L. Corran, S. F.
651,006.—CONCENTRATOR—S. T. Curtis, Virginia, Nev.
651,106.—LADDER—I. M. Dillman, Oakland, Cal.
651,009.—WEATHER STRIP—B. Erlandson, S. F.
651,327.—WAVE MOTOR—V. Gifford, Los Angeles, Cal.
650,941.—BICYCLE SADDLE POST—H. J. Kramer, Los Angeles, Cal.
651,192.—TICKET MACHINE—C. Landers, Tacoma, Wash.
650,946.—HAULING LOGS—Mason & Hart, Millwood, Cal.
651,017.—CARBURETOR—A. L. Navone, Calistoga, Cal.
650,985.—PUMP HEAD—R. J. Northam, Los Angeles, Cal.
651,086.—WHEEL—F. Prothero, Michigan Bar, Cal.
650,990.—RUG MAKING MACHINE—O. Rice, Oakland, Cal.
651,020.—HITCHING FETTER—Rommel & Owen, Los Angeles, Cal.
650,999.—SEPARATING SHELLS FROM KERNELS OF NUTS—J. F. Ulrichs, Alameda, Cal.
650,922.—GRAIN DRILL—A. V. Wilbur, Stockton, Cal.
651,286.—TRUCK LOCK—G. M. Williams, Santa Rosa, Cal.
651,002.—GAS GENERATOR—G. C. Wood, Applegate, Cal.
32,795.—DESIGN—J. Simonds, Berkeley, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

RUG SEWING MACHINE.—No. 650,990. June 5, 1900. Oliver Rice, Oakland, Cal. This invention relates to a machine which is especially designed for the manufacture of rugs. It consists in a novel mechanism by which the loops of the yarn are formed and engaged by a thread carried by a reciprocating needle so that each loop is given a proper height, and is tied or fastened by the thread of the needle. The machine comprises a transversely channeled table, a frame with rollers adapted to carry and transfer the rug base, a bar movable and guided in the table channel

with oppositely toothed racks and mechanism whereby the rug carrier may be transferred alternately from one side to the other. A second bar is secured on top of the first named bar and separated from the latter to provide a space for the passage of the rug base and having vertically disposed comb teeth projecting from its front. A plate is adapted to strip the loops of the comb plates after a row of loops has been completed. The fabric is then returned across the machine and a second row of loops is in like manner formed. A vertically pivoted hook is adapted to engage the yarn, this hook lying between spurs upon the front of a transversely movable and guided carriage, and this hook withdraws the yarn to form a loop. A vertically movable thread-carrying needle is reciprocated in unison with the movements of the looper and its thread is thus engaged with the yarn loop which at the same time is drawn down upon one of the comb plates and is tied or fastened by the thread so as to make the loops which form the surface of the rug uniform in length and appearance.

AUTOMATIC WEATHER STRIP FOR DOORS.—No. 651,009. June 5, 1900. B. Erlandson, San Francisco, Cal. This invention comprises a sealing strip adapted to close against the seal or surface below the door or window, a lever by which the strip is carried, and mechanism by which it is automatically actuated to depress the strip and make a tight joint when the door is closed and allowed to rise clear of its seat when the door is opened. It comprises a sealing strip, bars upon which it is carried movable within the channel in the lower part of the door, a centrally fulcrumed lever from one end of which said bars are secured, a contact plate by which the outer end of the lever is raised and a sealing strip depressed when the door is closed. A spring is located within the carrier and presses upon the top of the outer end of the lever whereby it is tilted and the sealing strip raised as soon as the door begins to open. There is an exterior casing with adjusting and locking screw whereby the carrier and connected parts are raised or depressed and locked in place.

CARBURETORS.—No. 651,017. June 5, 1900. A. L. Navone, Calistoga, Cal. This invention is designed to generate explosive vapor from suitable hydrocarbon liquids, and to mix the same with air in appropriate proportions. It comprises a generator having a heating pipe, an exterior case surrounding and supported upon the pipe, a spiral channel coiled and fitting around the pipe, with means for supplying a hydrocarbon liquid to the upper end and withdrawing the residue below. Means are also provided for supplying air to be mixed with the vapor as produced, with an adjusting device for regulating or cutting off the supply of air to be mixed with the vapor.



Pacific Steel Handy Wagon.

WHEELS.....28 and 34 inches high.
TIRES.....4 and 5 in. wide, 1/2 in. thick.
AXLES.....1 1/2 inch, solid steel.
BOLSTERS AND AXLE STOCKS...White oak.
CAPACITY.....Guaranteed 5000 lbs.

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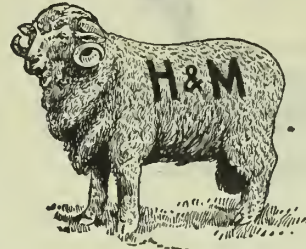
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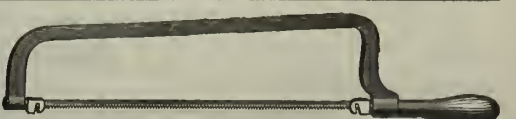
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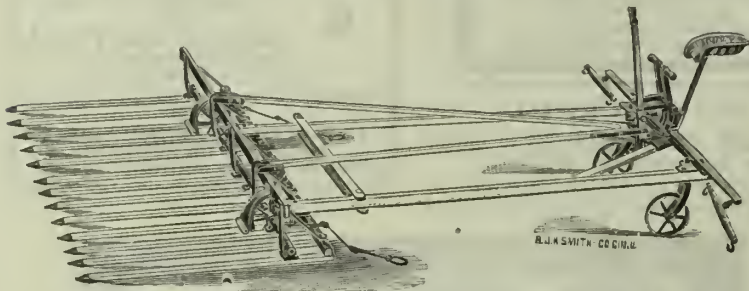
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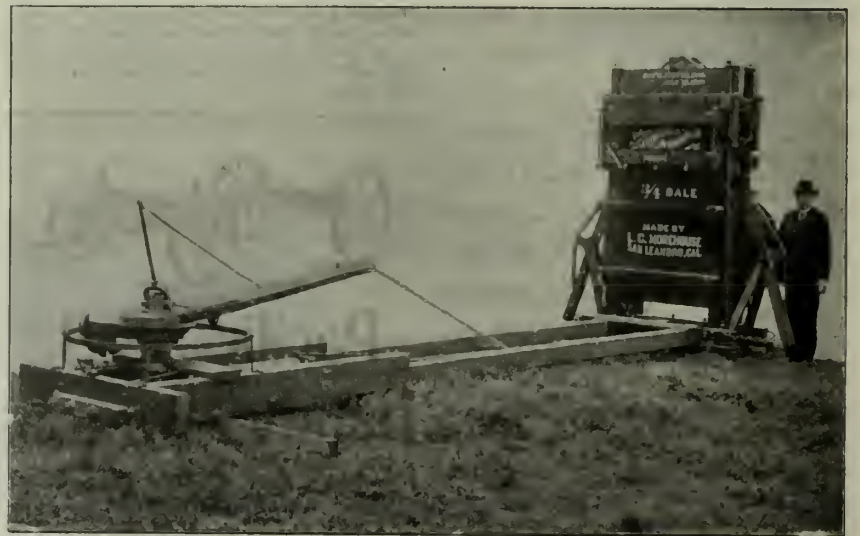
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Vol. LIX. No. 26.

SAN FRANCISCO, SATURDAY, JUNE 30, 1900.

THIRTIETH YEAR.
Office, 330 Market St.

Good and Bad Irrigation Water.

It is not enough to secure plenty of water for irrigation: it must be good water. The requirements of the tree are not like those of the higher animals, because they thrive upon water which may carry quick poison to the animal, and yet in some respects they do demand water free from substances which are dangerous to them. One class of such substances is of a corrosive nature and they bring evil both to tree and animal. A very small amount of arsenic is ruinous to plants and a larger amount of caustic alkali or of common salt or of some other substances will bring them into acute distress.

We gave some leading facts last week about the occurrence of alkali soils and some progress which has been made in demonstrating their nature and reclamation. Upon this page there are other points illustrated and they relate to the occurrence of alkali in water rendering it unfit for irrigation and destructive to the growth which its acid is invoked to promote. Prof. Hilgard has given much attention to this subject and his broad studies have enabled him to reach quite definite conclusions. He shows that the very slight taste possessed by glauber salt and salsoda does not adequately indicate their presence even when in injurious amounts; so that frequently a chemical test of the waters is the only definite guide. A few general rules, however, will help to enable the irrigator to determine whether or not such examination is called for. It may be taken for granted that the waters of all lakes having no regular outflow are unfit for regular irrigation use; since they must needs contain all the accumulations of salts



Orange Trees Irrigated With Alkali Lake Water.

from the solar evaporation of the waters that flow into them.

The engravings on this page exhibit the cultural results of several years' irrigation with the waters of Lake Elsinore, Riverside county, as compared with the growth of orange trees on the same land, but irrigated with artesian water. Lake Elsinore is fed by the San Jacinto river, and in wet years sometimes overflows for a week into Temescal creek. Thus its saline content varies somewhat, from about 80 to over 100 grains per gallon, of salts containing three-fifths of common salt and

one-fifth each of glauber salt and carbonate of soda. The latter tends to form a hardpan in the subsoil, and such hardpan was actually formed where the water was used; and afterward prevented its proper penetration, so that the trees suffered from dryness of their lower roots, while damaged by the alkali salts near the surface. Unfortunately, it is not easy to give absolute rules in regard to the exact figures that constitute an excess of salts for irrigation purposes, since not only the composition of the salts, but also the nature of the land to be irrigated, and

the frequency of irrigation required, must be taken into consideration.

Broadly speaking, the extreme limit of mineral content usually assigned for potable waters, viz., forty grains per gallon, also applies to irrigation waters. Yet it sometimes happens that all or most of the solid content is gypsum and epsom salt, when only a large excess of the latter would constitute a bar to irrigation use. When, on the contrary, a large proportion of the solids consists of carbonate of soda or of common salt, even a smaller proportion of salts than forty grains might preclude its regular use, depending upon the nature of the soil to be irrigated.

During the two dry seasons just past saline waters have frequently been used, exceptionally, in order to save trees threatened with death from drought. Prof. Hilgard has even advised that this should be done, with the proviso that the salts so introduced must be washed into the sub-drainage by heavy irrigation, whenever practicable, even if the same saline water should have to be used for the purpose. For few such waters are sufficiently strong to injure vegetation until concentrated by evaporation, as can be seen from the vegetation growing close to the margins of alkaline lakes, with its roots immersed in the water.

The irrigator can determine for himself whether or not his water is of doubtful character, by evaporating a tablespoonful, or more, in a clean silver spoon (avoiding boiling.) If the dry residue should form simply a thin powdery-looking film on the polished metal, he may be assured that the water is all right. If, on the other hand, an obvious saline crust should remain, which will redissolve in water, he should seek advice upon its character.



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E. J. WICKSON.....Horticultural Editor.

San Francisco, June 30, 1900.

TABLE OF CONTENTS.

ILLUSTRATIONS.—Orange Trees Irrigated with Alkali Lake Water; Orange Trees Irrigated with Artesian Well Water, 401.
EDITORIAL.—Good and Bad Irrigation Water, 401. The Week; Government Work for Irrigation; Close of the 59th Volume; Miscellaneous, 402.
QUERIES AND REPLIES.—Peach Moth in the Foothills; Birds and Ripe Fruit; The Diabrotica in the San Joaquin; Leaf Spot on the Madrone; Peach Mildew; The Phylloxera; Scales and Parasites, 403.
WEATHER AND CROPS.—Report of the United States Weather Service for Week Ending June 25, 1900, 403.
AGRICULTURAL REVIEW.—404.
HORTICULTURE.—Condition of Olive Culture in California, 405.
THE FIELD.—Hop Growing in California, 406.
SHEEP AND WOOL.—Management of Breeding Ewes and Lambs, 406.
METEOROLOGICAL.—An Electric Frost Alarm, 407.
THE HOME CIRCLE.—The Midnight Minuet; The Heroism of Hortense, 408. Run, Girls, Run; How to Grow Stout; New Zealand's Amazons; What to Drink; The King of Berries; The Four-Leaf Clover; Nervousness; A Dog Story, 409.
DOMESTIC ECONOMY.—Domestic Hints; Hints to Housekeepers, 409.
FRUIT MARKETING.—Cost and Returns of Orange Growing; The Almond Crop, 410.
PATRONS OF HUSBANDRY.—San Jose Grange; Secretary's Quarterly Report; State Convention of County Mutual Insurance Companies; A California Token in an Indiana Grange, 411.
THE MARKETS.—Produce Market; Fruit Markets, 414-415.
MISCELLANEOUS.—Fruit Canning Process, 412. Index to Volume, 416.

The Week.

This issue closes the 59th volume and the first half of the 30th year of the PACIFIC RURAL PRESS. It is a matter of some moment in a young country that a class journal should be able to point to such a bunch of years as belonging to its vigorous and progressive lifetime. It is a matter of satisfaction to us that an enterprising and earnest course, devoid of resort to sensational and boom patronage, should have so commended itself to a constantly growing clientage that our journal has been able to advance through all kinds of times and rejoice in its strength and popularity at the close of what is usually counted a generation of men. The PACIFIC RURAL PRESS has found strong and enthusiastic friends all along its course and it stands now at a point in favor and patronage higher than it has ever stood before. We feel like marking the period with a word of thanks to our wide circle of readers, in whatever clime they find their habitations, and to assure them that if honest and untiring effort can gain it the coming volumes shall please them better than the past.

The world's skies are cloudy. The era of war which began with the issue with Spain and continued with the struggle in South Africa, bids fair to attain a climax with an issue in China, which has been long predicted and now seems to be joined. The civilized world must maintain law and order in the Orient. California's relation to the conflict will be most humane and important. We shall have to do our utmost to supply the needs of the world's forces from our vantage point, geographically. It certainly looks as though all surplus staple food products of California would be drawn upon to meet the demand.

There has been great excitement in wheat on the basis of large shortage of the crop in the central Northwest. Spot transactions have been light, except for local use, but great speculative activity has prevailed and spot prices have been advanced surely \$1 per ton during the week. There have been backward and forward movements in futures; but now the direction is again upward. Barley is slightly advanced, but is not very active. Oats are unchanged. The new oats offered are rather poor. Corn holds its own and rye is a little stronger. Hay is slow but shows no decline, though the arrivals are large; the market is heavy. Beef has a narrow range, first and second qualities going at the same price. Mutton is unchanged; hogs are firm, though seven carloads of Eastern have come in during the week. Butter is too generally of poor quality, and the market is therefore in ill shape. Strictly fancy butter would bring full prices. Eggs are much in the same shape. Cheese

is steady. Poultry is selling more readily, but there is no change. Beans are quiet and unchanged. Potatoes are the same; but onions are higher, both for red and yellow. Fruits show wide range for local trade. Canners are taking some apricots at \$20 per ton and cherries at 5 cents for Royal Ann and 3½ cents for black. There are some new dried apricots sold at 6½ cents, but they are not high grade; high grade would be hard to get at 8 cents. Prunes have been raised ½ cent locally, but buyers are holding off a while. Wool is still waiting and doing nothing.

Government Work for Irrigation.

The great coming West of the country has reason to rejoice at the success which its representatives have had in urging at the national capital its claims for help in measures underlying future development. There are many signs that a narrow policy predicated upon utterances of prejudiced Eastern people is not to prevail. In fact there is now quite clear indication that our Eastern friends are widely for a true and broad view of Western development, and it is certainly for the best interests of the whole people that they should be.

One indication of the generous policy of the populous East toward the West is found in the Congressional appropriations for irrigation work. Recently we spoke of the provision for the extension of irrigation investigations by the Department of Agriculture under the direction of Elwood Mead. This work is now rapidly advancing in this State, both general and special investigations being now pushed by qualified engineers and experts. The irrigation survey work in charge of the United States Geological Survey, is also to advance under more liberal allowances and more will be accomplished. A letter from Hon. H. S. Boutell, M. C., with reference to the funds actually available, has this statement:

The original amount given by the House was \$50,000. This was increased by the Senate to \$250,000, and the Conference Committee finally agreed upon \$100,000, at which amount it became a law June 6, 1900. I have received quite a number of communications on this subject and am convinced that this work will be of great benefit in the development of the internal resources of this country. It was not possible, however, in the closing hours of Congress to secure any modifications of the conference report on the great Sundry Civil bill, in which this item is included. I am confident that adequate provision will be made for the carrying out of this work in the future.

In addition to this appropriation of \$100,000 the General Deficiency bill carried an appropriation of \$20,000 for this work, which is under the able direction of F. H. Newell, Chief Hydrographer of the Geological Survey. The expenditure of these appropriations will demonstrate the value of the work to the country and the necessity for larger appropriations in future. It is probably better that moderate appropriations should be made, providing they are adequate for satisfactory beginning, than that a rash sum should be too quickly available. The officers of the National Irrigation Association seem to think that the amount now secured affords a good working basis and that is all that is immediately required.

Another indication of the more trustful Eastern disposition toward the claims of irrigation development is seen in the fact that during the last session of Congress every bill relating to the public lands, which was not in harmony with the declarations of the Irrigation Congress held last year in Montana, was defeated. On the whole, there is every reason to expect the prevalence of the Western view throughout the country, so far at least as it is sound and just and in the interest of true national advancement, and that is all that we desire from it.

The prune and raisin undertaking have both made good progress during the week. By the California Cured Fruit Association large acreage has been secured since the board of directors determined to take up the active work of handling this year's big crop, and it now seems certain that before prune picking begins more than 90% of the yield of the State will be under the control of the association. In the case of the raisin association, while it seems improbable that 90% of raisin acreage required to give validity to the contract with the packers' combine will be secured by July 2, the date fixed, the acreage signed is increasing steadily. When the crisis in the affairs of the association occurred six weeks ago only 60% of the acreage had been secured and no more

signatures could be obtained. Since then the amount has increased to fully 75% and the prospects for obtaining over 80% are quite good.

THE shortage of wheat crop in the Northwest is evidently large. The Chicago Times-Herald published a crop report prepared by Snow, the crop expert, who has just completed a two weeks' tour through the States of Minnesota, North Dakota and South Dakota. He declares the situation a national calamity, and claims the wheat failure is the worst ever known. He estimates the Dakotas are promising only 20,000,000 bushels each and Minnesota about 35,000,000—a total of 55,000,000, against 200,000,000 last year and 225,000,000 in 1898. Oliver Dalrymple, the big wheat grower of North Dakota, writes: "Ten days ago I wrote you one-third of the spring wheat crop had been destroyed by drought. I now am of the opinion that two-thirds of the crop is killed beyond redemption. The Grandin farm is running sixty plows in the wheat fields. I shall start plows to-morrow, and nearly all spring wheat farmers will be plowing under wheat next week unless heavy rains come."

DECISIONS in favor of irrigation bonds are multiplying. We cited last week the declination of the Attorney General to question the standing of a district which had for several years been doing business. Now there comes a decision of Superior Judge Campbell of San Bernardino upholding the legality of the bonds of the Rialto irrigation district against parties suing to declare it illegal and annul its bonds. The judge claims that the purchasers of the bonds "were bona fide purchasers, without notice of any invalidity, if any existed; that the bonds are negotiable paper and that the irrigation district is estopped by recitals in the bonds from contending either that the issue of the bonds was illegal or that their sale or disposition was for a purpose not authorized by law." No taxes have been levied to pay interest on the bonds for five years, and mandamus proceedings will now be instituted to compel the payment of interest to date.

THE hop growers are proceeding with their effort at organization, the details of which have appeared in our columns from week to week. It was decided at Santa Rosa last Saturday to call a State convention to take final action in the premises. This convention will be held in Horticultural Hall, Santa Rosa, on Friday and Saturday, July 6 and 7, at which there will be fourteen active delegates to conduct the legislative business. There will be five from Sacramento, five from Sonoma, two from Ukiah, one from Watsonville and one from Lake county. Permanent local organizations have already been effected in the Sacramento valley and in Santa Rosa, and we trust our readers in Ukiah, Watsonville and Lake county will see that their regions are represented. As stated before, the object of the organization of the hop growers is to endeavor to improve the hop industry and place it on a better financial basis.

THE Great Northern Express Company, says the Seattle Times, has hit upon a plan for shipping local strawberries to the Eastern markets—namely, St. Paul and Chicago—and having them arrive there in the best condition. In former years it was the custom to ship the fruit packed in ice refrigerators, and but few crates were sent, for the reason that they would not keep in a way to demand ready sale at the farther end of the trip. This year the company tried shipping them in the dry air refrigerator, and it has proved a great success. The berries arrived in fine shape and were the best seen on the Eastern markets during this season. Many will be sent from now on.

THERE is prospect of an active competition for wine grapes this year. The Chronicle says that rivalry which has existed for many months between the California Wine Association and the firm of Lachman & Jacobi has become so intense that it has culminated in a struggle for pre-eminence in the wine trade of the State. It extends to both the dry and the sweet wine branches, and the contending parties are so evenly matched as to resources that a long fight is anticipated, in which the growers of grapes are apt to receive the advantage by the higher prices paid for their products.

QUERIES AND REPLIES.

Birds and Ripe Fruit.

TO THE EDITOR:—I have a small orchard, with very little other fruit for miles around, and in consequence have to support all the linnets which live in that part of the county. Not a ripe cherry, apricot or peach can be had, unless the trees are covered with nets. As you find other bugs to exterminate the scale insects, I have some faint hope that some bird may have been found whose mission in life is to kill linnets, which to me seem to do little or no good, and are a greater pest than codlin moth or scale bugs. The linnets seem to be increasing year by year.—AMATEUR, San Francisco.

Yours is a particularly difficult proposition, because of little fruit and many birds. The injury by linnets is usually done upon the buds at the time that they are opening, or even before they open, and not upon the ripe fruit. When they are eating buds they are destroyed by poisoning, using a small amount of strychnine dissolved in water, conspicuously placed, so that the birds will drink it. Some growers use much art in putting up shallow cans of water for the use of the birds and poisoning the water after they become accustomed to seek it. After a certain number of birds have been killed the others avoid the water, and then for a time pure water is used again until they forget the former injuries. In this way hundreds are killed during the late winter and spring time. Others use shotguns with fine bird-shot, and claim some advantage in that method, for after a certain amount of shooting the birds take their departure for a time. Birds are also killed by dissolving strychnine in the pulp of a halved orange, then placing the fruit upon the end of a branch, or upon a stick in some conspicuous manner. The difficulty with poisoning at this time of the year would be that you would destroy a great many birds which are really of advantage in the orchard. In the winter time there is less danger of this, because the linnets come in flocks unaccompanied by other birds. Probably you have tried various kinds of scares, like strips of tin attached to a string, so that they will sparkle in the sunlight, the ringing of bells attached to the trees, etc. As a rule, growers do very little to protect the ripened fruit. If the injury to buds could be successfully averted the growers would not begrudge the birds such quantity as they might require of the ripened fruit, and it may perhaps be wise for you to urge your neighbors to plant fruit so that enough for the birds may be spared without reducing home supplies.

The Diabrotica in the San Joaquin.

TO THE EDITOR:—A greenish yellow beetle, with twelve black spots, came suddenly this year when the early peaches were ripening, and has attacked the green and ripening apricots. I dislike to spray now, as I would like to save some of the apricots, but perhaps it would be better for future results, if the bug will locate permanently. It has made its appearance in former years, but never in such large numbers, and never did much harm. Is there any remedy? Can we spray at certain seasons to prevent its appearance?—B. M. BIXLER, Undine, San Joaquin county.

The twelve-spotted diabrotica (*Diabrotica soror*) seems to be unusually prevalent this year in the interior valley and is doing exceedingly great injury to ripe fruit. It is a very hard insect to combat, because, although it is susceptible to poisoning, it is not safe to apply arsenites to fruit when it is just ripening and most acceptable to the insect. The most success has been had with treatments which drive the insect away from the trees, such as burning damp straw, creating smoke on the windward side of the orchard. In this way some claim to have saved their fruit. The treatment, however, has to be repeated from time to time, for the insects fly readily and are apt to return. The insect is also difficult to kill because in its larval state it lives in the ground, subsisting on the roots of various plants. One encouraging thing about it is that it is quite subject to natural enemies, or is destroyed by divers natural conditions, because it is seldom continuously prevalent. It may be very abundant one year and decreasing afterwards for some years—perhaps to gain the ascendancy again afterwards. There are known to be enemies of it, but no great success has been obtained in the destruction of them. Because of the larval state in the ground it is not possible to free the trees by winter spraying, or by treatment

when the fruit is not liable to injury. This pest has been troublesome here and there in California for the last twenty-five years, and so far no perfectly satisfactory treatment has been devised.

Peach Moth in the Foothills.

TO THE EDITOR:—Our early peaches (Hale's) are infested by the peach moth, from 25% to 40% in some places. Would spraying at the present time with arsenical sprays or Paris green prevent further destruction to our late peaches by the later-hatched moths? Would the use of these sprays at the present time make our fruit dangerous to the consumer?—GROWER, Placer county.

Usually the peach moth is very much reduced by the use of lime, salt and sulphur in the winter time, because the larvæ pass the winter in the crotches of the trees, where they make burrows for their protection. A better winter treatment, however, is kerosene emulsion, made twice the strength which is used in the summer time. The kerosene readily penetrates the bark burrows and destroys the larvæ.

As this insect always enters the peach near the stem end, it would seem to be quite easy to poison it, as the codlin moth is poisoned, by spraying with Paris green; but, in the absence of experiments with the peach, one must consider the treatment somewhat dangerous, because of the liability of the poison to be retained by the rough coat of the peach. Nothing but actual experiments will determine this matter. If you wish to experiment with it, remember that the peach tree is quite subject to leaf burning by Paris green, and that pure Paris green should be used, the strength of 1 pound to 300 gallons of water. We do not know of any non-poisonous spray that could be used as a preventive which would not either spot the fruit or give it a disagreeable odor, and in that way destroy its value. We believe that your future safety will lie in a very thorough and vigorous winter treatment with strong kerosene emulsion. If you accomplish the destruction of the first brood, there will naturally be very little injury to the later fruit.

Leaf Spot on the Madrone.

TO THE EDITOR:—Mr. Thorne handed me this specimen of madrone leaf, from Santa Cruz mountains, with some fungus or insect at work on it. Could you tell us something about it in the PACIFIC RURAL PRESS columns?—EDWARD BERWICK, Monterey.

The madrone is quite subject to the attack of a distressing fungus, which makes it quite unsightly, but this is fortunately not that one. Your specimen is one of the leaf spot fungi which may or may not gain prevalence enough to occasion alarm. If the spots multiply enough to materially injure the leaves, and the trees are kept for ornamental purposes, so that some expenditure for treatment is warranted, the fungus can be checked by spraying with Bordeaux mixture. As, however, between a few of these spots and a tree covered with blue whitewash, we should hold to the former as long as the fungus attack is not enough to interfere with the thrift of the tree. The specimens you send do not warrant anxiety in this respect.

The Phylloxera.

TO THE EDITOR:—Is phylloxera on roots of vines only, or also on their leaves and branches? Is it possible in delivering grapes to a winery, where boxes mingle with those that come from infected places, that phylloxera may be carried and spread to uninfected places?—READER.

The phylloxera occurs on both leaves and roots, but in California it is exceedingly rare on the leaves. We have only seen one case in twenty-five years. The danger of securing it on grape boxes is so small as hardly to be worth any consideration at all, but, of course, one cannot say that infection from this source is impossible.

Scales and Parasites.

TO THE EDITOR:—I send you five branches infested with scale—two orange, one peach, one apple and one apricot. Are they all but one the same insect? What is its popular name? No. 4 is infested with brown apricot scale, and you will notice their backs are all punctured. Can you tell me what friendly insect is doing this work?—ORCHARDIST, Watsonville.

Your samples Nos. 1, 2, 3 and 5 show the "black scale," as it is popularly called. Its scientific name is *Lecanium oleæ*. No. 4 shows only one scale in place, though others have apparently been rubbed

off in transmission. The one remaining in place has been parasitized, as you suspected. Whenever you find a scale with a hole in the top you may be sure that it has been parasitized, because it is not natural for the young insects to emerge by such an opening. They run out from under the shell without making conspicuous openings. In all probability, the parasite is *Comys fusca*, though nothing of it is now present but the hole through which the mature fly escaped.

Peach Mildew.

TO THE EDITOR:—Enclosed we send you some small twigs from peach trees which appear to be affected with some sort of fungus growth. Will you kindly inform us what the nature of it is?—GROWER, Solano county.

The peach twigs are affected with the "peach mildew," the same fungus which sometimes makes white spots upon the fruit. It has been found by experience that a winter treatment with lime, salt and sulphur almost banishes this trouble. The summer treatment would be the application of sulphur in the same way which it is applied for red spider.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 25, 1900.

ALEXANDER MCADIE, Forecast Official and Station Director.

COAST AND BAY SECTIONS.

The temperature has been above normal, and no rain has fallen except light showers in the northern coast counties. Grain harvest is progressing; in some sections the yield is not equal to expectations, but the quality is excellent. Thrashing has commenced in some places. Hay baling continues. The second crop of alfalfa is looking well. Beets, carrots and other vegetables are making good growth. The hot weather has ripened fruit very rapidly, and it is said this will quite seriously affect the yield and quality of some varieties. Olive trees and grape vines are thrifty, and give indications of a good crop. Hops are looking better.

SACRAMENTO VALLEY.

The weather has been generally cloudy and sultry, with high temperatures nearly every day. On the 21st there was quite a heavy rainfall in Tehama and other counties, the precipitation being 0.54 inch in the vicinity of Red Bluff. Ripe fruit, barley in sacks and cut hay were somewhat damaged, and grain harvest was retarded. Standing grain and other crops were benefited by the rain. On the creek lands grain is yielding better than expected, but on the uplands it is said to be below average; the quality is very good. In some localities hay is of inferior quality, owing to undergrowth of weeds. Hops are improving and appear quite vigorous, but the yield will be below last season's. Pears and prunes are yielding good crops. Olives are doing well. Oranges are dropping at Thermalito.

SAN JOAQUIN VALLEY.

Warm, clear weather has been favorable for the ripening and harvesting of all crops. Harvesting is progressing favorably in most sections. Wheat is turning out well; the grain is plump and the yield will be good. In some sections barley is reported as shrunk, but the yield will be fair even in those places. Drying of apricots is progressing, and the yield is generally good, but in some localities will be impaired by shot-hole fungus. Apricots, plums and prunes are being shipped. Fruits of all kinds are ripening fast, with good prospects. Alfalfa is doing nicely. Plenty of water in the ditches, and is freely used.

SOUTHERN CALIFORNIA.

The weather has been favorable for fruits and all other crops. Apricots are ripening, and picking has commenced. Apple and peach trees are coming into bloom. Vineyards are looking well, and in some localities give promise of a fair crop. Walnuts are making good growth, and in groves where water is plentiful there will be a full crop. Haying is practically finished, and the crop is in stack. Corn, potatoes and melons are thrifty, and will yield good crops.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 27, 1900, are from official sources, and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Minimum Temperature for the Week.....	Maximum Temperature for the Week.....
Eureka.....	1.26	51.67	35.30	44.40	52	70
Red Bluff.....	.54	23.80	21.70	27.60	62	100
San Ramon.....	.74	20.24	15.04	20.31	52	92
San Francisco.....	T	18.46	16.87	22.49	52	70
Fresno.....	.00	10.27	7.84	8.88	58	102
Independence.....	.00	3.69	1.58	4.69	61	96
San Luis Obispo.....	.00	17.30	17.33	16.80	50	84
Los Angeles.....	.00	7.91	5.59	17.26	56	82
San Diego.....	.00	5.95	5.24	9.46	60	72
Yuma.....	.00	1.29	1.34	2.89	68	108

Agricultural Review.

ALAMEDA.

TO EXTERMINATE GRASSHOPPERS.—Livermore Herald, June 23: Grasshoppers are especially numerous in a limited area in the southeastern part of this valley. After the grain crop is removed they seek the vineyards. D. A. McNally lost an entire crop of grapes several years ago and this is probably the reason why this vineyard was selected by Alexander Craw and Horticultural Commissioner Pryal last week to release a number of insects which are foes of the festive hopper. The insect is from the interior of Australia, where it was found by Prof. Cobley of Alameda. In size it is a little smaller than the house fly, covered with hair, and has a longer abdomen. The method of killing hoppers is to bore a hole in the back of the hopper where the eggs are laid. The young are hatched out and destroy the hopper. As hundreds of eggs are laid every year by each insect, the progress of extermination is rapid.

FUTILE ATTEMPT TO CO-OPERATE.—Oakland, June 21: The efforts of the Alameda Bay District Fruit Growers' Association to have apricot growers combine and sell their apricots to the drier have been futile. At a meeting of the Fruit Growers' Association held in Haywards this evening the growers refused to combine. Several communications from San Jose driers were read, giving the prices for which green apricots could be dried. The minimum price was \$9.70 per ton for green fruit, or \$48.50 for fruit per dried ton. When it became evident that the growers would not combine R. Hickmott moved that the fruit growers sell their fruit as best they could and the motion carried. The canners' association has contracted for three thousand tons of apricots in that vicinity, and the growers with whom the association has contracted are now fearfullest the canners will not stand by their contract. The contracts call for good, merchantable fruit, and the association has given the growers notice that the apricots must not only be merchantable, but that they must also be unblotched and not cracked. This will exclude about one-third of the tonnage contracted for.

BUTTE.

DIRECTORS MEET.—Biggs Argus, June 22: At the annual meeting of the Farmers' Co-operative Union Warehouse the board of directors and officers were re-elected, as follows: H. M. LaRue, president; W. T. Boulwaro, vice-president; D. Streeter, treasurer, and C. N. Brown secretary and Supt. of the warehouse. The warehouse handled for the year ending June 1, 1900, 198,909 sacks of grain, equal to 13,946 3/4 tons. There was in the warehouse June 1, 1900, on storage 4525 tons of grain, since which time about 300 tons has been shipped.

FRESNO.

NEW WHEAT.—Reedley Exponent, June 21: R. H. Bowen brought the first new wheat of the season to town last Friday.

WATERMELON COMBINE.—Fresno, June 23: A watermelon combine, similar to the Raisin Growers' Association, is being organized here. Within the last five years the melon industry has grown to large proportions and Fresno has become a distributing point for melons in the San Joaquin valley. An effort will be made to obtain 90% of the acreage, and a special effort will be made to prevent the shipment of inferior melons to market.

GLENN.

GRAIN FIRE.—Willows Journal, June 22: A disastrous grain fire occurred southeast of Willows Wednesday afternoon. The fire originated on the old Houtchins place, now farmed by T. A. Jenkins. Owing to a heavy south wind, all efforts to check the fire proved futile and it spread to adjoining ranches. It consumed 400 acres on the Jenkins place, 350 acres on the Henry Stone place and 900 acres belonging to F. Quint. The wheat was very heavy and of fine quality, and was turning out fifteen sacks to the acre. All of the above parties were insured, but owing to the heavy

yield the insurance will only partly cover the loss. P. R. Garnett lost fifty acres, uninsured. The great Glenn tract joins the Quint place on the north and was in danger, but owing to the efforts of the entire force, some 500 in number, they were able to stop the fire without damage resulting. For some time it was thought the fire would sweep the entire country to the river, but fortunately the wind abated and by back-firing the fire was gotten under control. The estimated loss is as follows: F. Quint \$10,000, Jenkins \$4375, L. H. Stone \$4375, P. R. Garnett \$500. Besides this, miles of valuable fence was destroyed. The total loss is about \$20,000.

BIG WATER CLAIM FILED.—Red Bluff News, June 21: The Stony Creek Irrigation Company has filed a notice claiming the water flowing in Stony creek to the extent of 100,000 miner's inches. The lands to be benefited thereby are townships 19 to 22 north, range 3 west, and townships 20 to 22 north, range 4 west. The water is to be run through a ditch 25 feet on top, 20 feet on bottom and 5 feet deep. The notice is signed by T. J. Kirkpatrick as president.

HUMBOLDT.

CREAMERY PRICES.—Arcata Union, June 16: Following are the prices paid per pound for butter fat by the Eel river creameries yesterday: Humboldt, 19 1/2; Diamond Springs, 19 1/2; Grizzly Bluff, 18 1/2; Cold Springs, 19; Eel River, 18 1/2; Excelsior, sixteen days 18 1/2, fifteen days 19; Riverside, 19; Ferndale, 18 1/2; Crown, 19; Anderson's, twenty-four days 18 1/2, seven days 20; Capital, 18 1/2; Abrahamson's, 19; Cream Valley, 19; Sunset, 19 1/2. Arcata creameries—Nos. 1 and 2, 18 1/2; Silva, 18; Harpst & Spring, 18 1/2.

KERN.

BELIEVES IN OLIVES.—Bakersfield Californian: Mr. Day planted forty-five acres of olives last spring which made a wonderful growth, showing 5 feet of wood. The ground was irrigated from a well three times, once before planting and twice afterward, the method adopted being to throw up small levees 5 feet on each side of a row and flood the narrow strip between. The system gives satisfactory results and water is used economically. As an instance of the amount of fruit that can be produced here, he tells of the twenty-five-year-old olive tree in Geo. Daggett's back yard. This tree stands on the edge of a mound and has never been pruned or watered, yet last year it yielded two barrels of berries which in the Los Angeles market would have sold for \$40 on the tree.

MENDOCINO.

WOOL SALE.—Ukiah Democrat, June 22: Up to last night there had been stored in Crane's warehouse 1125 sacks, averaging about 325 pounds, making a total of 365,625 pounds. The market has not opened up very briskly yet. Some small sales have been made at 17c. The output this year is larger than it has been for a number of years. The quality is good.

MERCED.

NOT A SOULLESS CORPORATION.—Modesto Herald, June 21: The Miller & Lux Canal Co. are giving farmers in the Los Banos country who lost their wheat crops through rust, one free irrigation for corn—most of the farmers under the canal burning off the worthless wheat and planting corn.

MODOC.

CREAMERY INCORPORATED.—Sacramento Record-Union, June 23: Articles of incorporation of the Adin Creamery Association have been filed with the Secretary of State, with G. H. Knight, J. E. Miles, R. A. Harper, P. W. Johnson, E. M. Wilson, Benjamin Bath and I. J. Hastings as directors; capital stock, \$4000; subscribed, \$1500.

MONTEREY.

GROWING MUSTARD.—Monterey, June 24: A new industry—mustard culture—is being tried this year and the crops are very promising. There are about a dozen ranchers trying the experiment, chiefly in the Canada Segunda, Carmel and Coast districts, and a yield of over seventy tons of mustard seed is expected. In early days mustard culture was one of the leading industries, but of late years nothing at all in that line has been tried. It is believed mustard can now be made a very lucrative crop if properly handled.

SELF-LEVELING GRAIN CLEANER.—Salinas Index: J. M. Lasswell of San Miguel has been advised that his application for a patent on a self-leveling grain cleaner for combined harvesters has been allowed. Heretofore the cleaners used in connection with sidhill harvesters required the attention of an attendant to keep the cleaner level. Even then it was impossible to keep them level at all times, which resulted in the loss of more or less grain. Mr. Lasswell has invented a cleaner, the body or casing of which remains stationary, while the screens over

and through which the grain passes during the cleaning process remain perfectly level at all times, by means of weights attached to them, both transversely and longitudinally. No matter how suddenly the body of the harvester may change its position, the screens in the cleaner will maintain their proper position and perform their work without the slightest interruption or variation. By an ingenious device the shake of the screens may be increased instantly, while the cleaner is running, without any inconvenience.

SAN BERNARDINO.

FRUIT BUYING.—Redlands Facts, June 18: "There is something curious about the consumption of fruit," remarked Howard Andrews, in talking of cherries and the cherry crop. "The fruit cities, like Redlands and Riverside, consume much more fruit than the others. Take cherries, for instance. The annual daily consumption of this fruit just now is 1500 pounds. As near as I can find out, Riverside takes about twice this amount, the consumption per capita being about the same as here. But in San Bernardino, with more people than there are in Riverside, they take only 300 to 400 pounds of cherries a day from all sources. Perhaps you have noticed that the grocers don't handle fresh fruit in San Berdoo as they do here. The town is supplied by the few little fruit stands and peddling wagons. It is so all over southern California. We ship the bulk of our cherries to the fruit towns."

LASSEN.

MEADOW PASTURAGE.—Red Bluff News, June 22: John W. Johnson is in from his stock range near Susanville, and states that feed is plentiful in the creeks, but indications are that they will run very low before the season passes. All the bands of sheep reached the ranges in the best possible shape; in fact it is said that a better drive was never experienced. There is much complaint about the sheep license in Plumas county, and the result is that thousands of sheep have been kept away from the ranges this summer. The tax in Plumas is 10 cents per head, while that in Lassen is but 5. In driving across Plumas county the sheep are carefully watched, and if they pasture for more than three days the tax is applied. The sheep men acknowledge the justice of imposing a tax, but they believe 10 cents is exorbitant.

SAN DIEGO.

LEMON SHIPMENTS.—San Diego Union, June 21: The shipment of between forty and fifty carloads of lemons last week broke all previous records. The packing houses have been working to their full capacity during the past week, and some of them have been unable to get all the packers needed, making it necessary to work nights. At present packers are paying 1 1/2 cents per pound to the growers, and the shippers are paying \$2 per box for the fruit, leaving both a margin of profit. A carload of lemons brings from \$1000 to \$1100 in the East, but \$325 goes for freight. It costs \$80 to ice a car while in transit. It has been found that by icing the cars the rotting of fruit can be greatly reduced, and that is the method that is now being employed by the shippers. The fruit not only arrives in better condition in the East, but the Eastern merchants get a better opinion of California.

BIG PUMPING PLANT.—The new Bonnie Brae pumping plant at National City, with a capacity of 1,250,000 gallons every twenty-four hours, was started to-day, and will hereafter help furnish the supply for the lemon groves along the Sweetwater system. The plant consists of a pumping engine with an 80 H. P. boiler. The pump is connected with twelve wells, and arrangements have been made to put down more at once. The apportionment of water to the irrigators has been increased several times during the past week, and now amounts to 825 gallons per acre per day.

SAN JOAQUIN.

WHEAT IN WAREHOUSES.—Stockton Mail, June 21: The spurt in the wheat market has benefited San Joaquin county people many thousands of dollars. There are now in Stockton warehouses between 40,000 and 50,000 tons of wheat, which belongs mainly to farmers. At the beginning of the month the exact amount in the local warehouses was 48,414 tons. It is believed that at least 40,000 tons remain.

SANTA CLARA.

ANNUAL PICNIC.—San Jose Mercury: The annual picnic of the Santa Clara Valley Poultry & Belgian Hare Club was held at the Santa Teresa Poultry Farm, 2 miles south of Edenvale. Members of the club and their families were present. At 1 o'clock lunch was served, and it was "fit for the gods." After-dinner speeches were made by Messrs. Berrarr and Harker, who have just returned from abroad. Mr. Harker said: "The Englishman raises

Belgians as a true fancier, and not for market. The largest number of Belgians owned by any one breeder will not exceed fifty. The immense quantity of hare meat consumed in London is raised in Belgium." Mr. Berrarr reviewed his inspection of poultry while in England and France. He said: "They do not breed as high-grade poultry, with the exception of one or two breeds, as we do here in America." After dinner the regular monthly meeting of the club was held, two new members admitted and C. C. Schroder of San Jose elected secretary, to look after the Belgian hare department in co-operation with E. Van Every, the club's secretary. Arrangements were made for an extensive exhibit of both hares and poultry at the coming State Fair. After adjournment an inspection was made of this most excellently equipped poultry farm.

SANTA CRUZ.

STRAWBERRY SHIPMENTS.—Watsonville Pajaronian, June 21: Strawberry shipments from Watsonville this month have been averaging over 600 chests per day—four carloads. The growers of Pajaro valley have formed a combination to handle their berries in the San Francisco market. About all of the berry crop of this section is in the combination. The berries are being handled by Trobeck & Bergen and L. Scatena & Co. They have made arrangements with the California Canners Co. to take all the surplus strawberries at \$2.50 during the canning season. The new deal assures a fixed minimum price for strawberries, and the question of the disposition of surplus fruit ceases to be troublesome. Heretofore canners have purchased surplus strawberries at their own figures. The new deal promises several thousand dollars more for Pajaro berry growers.

SOLANO.

DESTRUCTIVE DIABROTICA.—Dixon Tribune, June 22: The apricot and other fruit crops that are approaching the ripening stage in this community are suffering severely from the depredations of an insect known to the entomologist as the Diabrotica, commonly called the "squash bug," while many confuse the variety with the "lady bug." In several orchards the havoc that is being wrought by the pests is alarming and the damage done will amount to many hundred dollars. Hundreds of trees which before the arrival of the pests hung full of well-proportioned fruit will yield nothing, their products being total losses. In several instances blackberries and raspberries have suffered from the depredations of the pests. They have been quite common here in former years, but no material damage resulted from their visitations and our fruit growers are at a loss to understand why they have attacked fruit of various kinds. Their destructiveness has heretofore been directed toward squash and other vines, fruits being regarded as immune. [This insect is discussed in our "Queries and Replies" column this week.—ED.]

SONOMA.

WOOL SALE.—Cloverdale Reveille, June 23: There was not much stir in the wool sale Thursday and Friday. A number of growers were in attendance, but no inclination was manifest to sell at the price offered until Friday afternoon, when 150 bales were sold for 16 cents. About 650 bales are stored in the warehouse.

YOLO.

FIRST CAR OF DRIED APRICOTS.—Winters Express, June 22: The first car of the new crop of dried apricots was shipped on the 21st. They were Royals of extra choice quality. Cannery shipments are about closed, and apricots that do not go on to the drying trays in a few days will be past handling. Green shipments have not been profitable this year, despite the fact that the fruit was choice, though some good sales were made.

YUBA.

HOP NOTES.—Wheatland Four Corners, June 23: Hop growth is rushing with the present warm weather. The majority of forward vines are over the top wire and have armed out well. On many vines the hop burr is forming. Owing to the backward condition of some yards the Bear river crop will be short this year.

\$100 Reward, \$100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure now known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

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HORTICULTURE.

Condition of Olive Culture in California.

Last winter, in response to requests from the Los Angeles Chamber of Commerce and others, the Experiment Station of the University of California undertook a special inquiry into the condition of the olive industry in California and entrusted the work to Prof. A. P. Hayne, who had previously given much attention to olive growing and manufacturing both in Europe and in this State. Prof. Hayne's report has just been printed, and to bring to our readers at once what seems to be the point of greatest general moment, we undertake an abstract, laying aside some particulars for subsequent use as they may seem especially seasonable.

THE INQUIRY.—In the pursuit of this investigation, the merchants of the large cities of the State, as well as the growers of olives and the manufacturers of oil and pickles, were interviewed. The counties of Butte, Placer, Sacramento, San Joaquin, Merced, Fresno, Tulare, Santa Clara, Alameda, Contra Costa, Santa Barbara, Ventura, Los Angeles, Orange, San Diego, San Bernardino and Riverside were visited, and all the reported failures, as well as the successful orchards, were investigated.

Summarily stated, it has been found that there is nothing in the condition of olive culture in California to justify the sweeping statements made by some that olive culture is a failure. On the contrary, it was found that wherever trees of suitable varieties, planted on suitable soil, had been given proper care, and the crops properly harvested and manufactured, olive culture was a success—certainly as marked a success in the case of any other kind of fruit culture now existing in California.

There is a good and growing demand all over the United States for certain products of the olive, and the supply is at present insufficient to meet the demand. Ripe pickles of standard quality bring in bulk 75 cents per gallon f. o. b., while good ripe olives for pickling are sold on the tree at from \$20 to \$90 per ton. Oil olives vary in price according to variety and location.

The market was found to be poorly organized, and the feverish, panicky feeling prevailing in certain localities renders generalization misleading.

CAUSES OF FAILURE.—The causes of failure were found to be among the following: Cultural Conditions—Improper selection of soils; neglect of tillage and irrigation; neglect of proper pruning; neglect in fighting insect pests. Commercial Conditions—Competition with cottonseed oil and others sold as "olive oil;" poor harvesting and manufacturing methods; selection of unsuitable varieties.

As a rule, at least three out of the above mentioned causes were found to be concerned to a greater or less degree in the failures; and it was found, on the other hand, that in every case where well-selected varieties had been planted on proper soil and were properly cared for, harvested, and manufactured, no serious difficulty was encountered.

During his trips among the olive orchards of the State, the writer was so greatly impressed with the frequent neglect of these conditions which affect success or failure in the growing and marketing of the olive, a neglect due either to carelessness or lack of information on the part of the grower, that he briefly reviews the chief points mentioned above, for the benefit of those growers who have reported failure. Too much emphasis cannot be placed on these points, in view of the cloud that now hangs over the olive industry, caused mainly by improvident and wrong methods of culture, and of handling of the tree and fruit.

THE OLIVE REQUIRES CARE.—Perhaps the most important fact brought out by the investigation was that the olive tree requires as much care and attention as any other fruit tree, and when it receives this on suitable land it is always a success. When the industry was in its infancy the country was flooded with articles written by people who knew little or nothing about olive culture, but who had a high appreciation of the beautiful, as well as ready pens. Nurserymen who were anxious to sell trees, or real-estate owners who had land for sale, wrote and distributed broadcast a mass of fiction, which was all accepted as fact by the planters of olive orchards.

IMPROPER SOILS.—The first and most harmful teaching of these writers was that the olive tree would grow where no other fruit tree would live. This is founded on fact, but they neglected to mention the additional fact that while the tree would live in such locations, it would not bear profitable crops. As a result of these teachings large areas that have been planted in olives not only do not pay now, but never will. It is a clear conclusion from experience that the olive appreciates a good soil, and its requirements in this respect are like those of other fruit-bearing trees.

IMPROPER TILLAGE AND IRRIGATION.—The supposed immunity of the olive tree from the most common requirements of culture led to the additional erroneous conclusion that the olive needs little or no water, and large areas were planted in localities where water

could neither be had from sufficient rains nor from irrigation. From one end of the State to the other not a single exception was found to the rule that, to be profitable, the olive requires water, pruning, and care. It is true that an excess of water will kill the tree, but this is also true of other trees.

By cultivation is meant such a breaking up and loosening or tilling of the hard soil, such smoothing of the surface of a rough soil, and such destruction of weeds and useless growth, that the moisture may be kept in the soil and stored for the use of the plant it is desired to grow.

In certain sections it was found that standing water existed all the year at a depth of 3½ feet, and yet two annual irrigations were practiced, with little or no cultivation. In such cases drainage and cultivation of the soil should certainly have taken the place of irrigation. In other sections there had not been sufficient rain during the winter to furnish a supply of water, so that irrigation became necessary.

In localities where water was difficult to obtain during the summer, most excellent results have been obtained, on well-drained lands, by winter irrigation; i. e., when water was abundant, the land was flooded and thus allowed to absorb as much water as would have been supplied by an abundant rainfall. Wherever this was practiced the results were most striking, as is shown by winter-irrigated trees at the Pomona Experiment Station.

Those who defend their neglect of cultivation on the ground that it is not necessary because the olive grows on hilltops in the Old World, should understand that in "starting" those trees great care was necessary, and that the peculiar structure of the substrata enabled them in the course of years to draw a water supply from them. Aside from this, the rainfall in Europe is heavier than in California, and more evenly distributed.

The olive, more than any other fruit tree, is sensitive to excess of water; but it must have as much as any other tree, if good, well-developed and matured fruit is desired. Striking examples of this were seen throughout the State. Those who doubt this are advised, for economy's sake, to spend a few weeks visiting the olive orchards which are profitable, and then some of those which are not.

The best example of the effects of natural irrigation by underflow was found on the 1200-acre orchard of the California Olive Growers' Association, at San Fernando. This is situated in an apparently dry desert land, but is sub-irrigated by drainage from the mountains. The trees in 1899 were not irrigated, yet the growth was in many cases over 10 feet.

In San Diego, Riverside, Santa Barbara, Ventura, Fresno, San Joaquin, Sacramento, Butte and other counties the same observation was found to be true; although in many places the effects of irrigation were nullified by improper cultivation, or by disease.

NEED OF PROPER PRUNING.—Another false idea extensively held and carried into practice is that the olive needs no pruning. There is perhaps no tree known that requires more constant and systematic pruning than the olive. Whatever the form of the tree may be or the system employed, it remains true that pruning must not be neglected. The olive is very generally believed to be a tree that yields but irregularly. This, while but too commonly true in practice, is not as a rule a necessary fault. In all cases observed, not only in California, but in other countries of the world, the tree has been found to be as regular a bearer as any known fruit tree; provided that it has received proper care and attention and is not the victim of accident, such as a hot wind occurring when the tree has a heavy crop of blossoms.

As the tree does not bear on the young of the year, a system of pruning can easily be adopted that will render it seemingly most erratic in its behavior. It is, in a large measure, due to improper pruning, or the absence of pruning, that this widespread idea concerning the irregularity of the olive crop has come to be accepted.

In but a few orchards of the State was proper pruning of the olive tree found; indeed, as a rule the trees were allowed to grow with no guidance whatsoever; wherever rational pruning was practiced, regular crops were found to be the invariable result. The pernicious teaching that "the olive tree requires no pruning" is responsible for much of the actual loss both of crop and in useless expense in harvesting. Low-pruned trees with an actual bearing surface equal to that of trees which have been allowed to grow more in the shape of tall oaks than fruit trees, were harvested for a cent or cent and a half less per pound than in the case of the high-pruned trees. In the one case a small stepladder, 8 feet high, was used for the top picking; while in the other, ladders 45 feet high had to be used. Where any considerable quantity of olives are to be picked, the saving made by the use of a system of low-pruned trees is too obvious for further discussion.

OBJECTS TO BE ATTAINED BY PRUNING.—Olive trees are pruned for the following purposes:

(a) To give proper form to the tree in order to facilitate cultivation and harvesting.

(b) To get rid of all useless wood and replace it with wood that produces fruit. Each twig should have its excuse for existing; and if it is useless it should be mercilessly suppressed.

(c) To insure a regular crop of large and uniform fruit.

The olive tree, it must be remembered, bears fruit only on wood of the preceding year and never twice in the same place. It will, however, bear on the prolongation of the fruit branch.

The problem before the pruner, then, is to so regulate the number and kind of branches on the tree that only a sufficient number of wood branches are left to shape the tree or to subsequently furnish a place for fruit branches. He must keep constantly in mind the fact that nature in its wise regulations of plant life has so ruled that all plants, when they become feeble or when death is imminent, will tend to reproduce their kind by bearing abundant crops of seeds, for nature cares not for the size of the fruit. The seed inclosed by the flesh is what is provided for. It is left for man to so regulate the tree by pruning, bending and deflecting the branches that the tree becomes slightly weakened; then so to direct and control the sap supply that the seeds may be clothed with abundant flesh. Hence it is that no hard-and-fast rules for pruning can be laid down. The factor of judgment or common sense can not be eliminated from the problem; the pruner should learn to read the requirements of each tree as though it were a printed page. One tree may need to be severely cut, while another may need but a little pinching back with the fingers. On one tree all efforts should be bent toward the production of wood branches in order to renew the vigor of the tree, it being kept constantly in mind that the wood growth varies directly as the wood and leaf growth, and that a feeble tree can be revived by severe pruning for wood branches, while a too vigorous tree may be checked by cutting out or deflecting the vertical wood branches and converting them into fruit branches.

LOSS OF CROP FROM FAILURE TO "SET."—In many cases great loss has resulted from the failure of the fruit to "set". Many very interesting cases of this trouble were found. It is claimed by many eminent authorities that the olive should be cross-pollinated. While it is true that there have been many experiments reported which would seem to give some color to this apparent lack of self-fertility, yet the writer is not at all prepared to admit that it is a necessity, but only an occasional help, owing to some accident. Isolated trees separated by mountain ranges bear regularly and set as much fruit as is good for any vigorous tree to bear. Whole blocks of almost all of the known varieties produce regular crops, though miles away from any other variety. Then again, if there were anything in the theory of cross-pollination it would be noted that where two blocks of varieties touch, the trees nearest each other would set their fruit better than those on the farther sides of the blocks. This, however, is not the case.

Probably the most practical remedy thus far found for failure to "set" is to keep a dozen stands of bees in each twenty acres of trees during the blossoming period. This has been tried in many cases and has proved to be inexpensive as well as effective. It is to be noted, however, that when, at blossoming time, there arises one of the dry winds—"northers"—the chances of getting any kind of fruit to "set" are few indeed, for the wind dries up the delicate organs of the blossom and renders fertilization impossible.

DISEASES.—The diseases of the olive tree can be divided into two classes: those that attack the tree itself, and those that attack the fruit. Among the former, the commonest and most troublesome thus far found in California is the Black Scale (*Lecanium oleæ*), with its accompanying fungus the Black Smut (*Meliola* sp.). It is, however, true that other scale insects are occasionally found on the olive tree. The scale not only sucks the sap of the tree, but when young and migrating, excretes the "honey-dew," which at once becomes the home of the fungus known as the "black smut." In few cases do these diseases cause the death of the tree. Ordinarily they only check its growth and vigor to such an extent that (in severe cases) no crop or wood growth is produced.

The scale insects and resulting diseases are found most frequently along the coast, in the foggy regions. These diseases, viz: the scale and the smut, can be kept so far in check as to do no practical damage to the tree. The means thus far employed are the use of washes and fumigation; in some districts the Australian ladybirds have been found effectual in checking the disease. There is a decided conflict of opinion among olive growers as to the relative merits of these remedies for combating the above-named diseases. The writer had occasion to see most striking instances of the efficacy of both of these methods, and on the other hand, as many, fully as striking, of the failure of each. There would seem to be an intervention of local conditions which render it more difficult in some cases to successfully apply these remedies than in others. Thus the subject is not sufficiently well studied at present to render it advisable for the writer to definitely recommend the exclusive use of either.

DISEASES OF THE FRUIT.—The investigation brought out the fact that certain varieties of olives grown in California are subject to diseases which render them unfit for use. This trouble was first noted in California in 1897, and has since spread all over the

State. So far as the writer is able to judge, these diseases are not known in other olive-growing countries of the world; hence the previous recommendations of certain varieties grown in Europe and elsewhere (which was made by the writer and by the most distinguished olive experts of the State) will have to be modified, as the presence of these diseases alone in many cases is sufficient to render many of them unprofitable.

Described in a general way, the trouble is a dry rot of the fruit, which attacks it just as the drupe has or is beginning to mature or change color. This decay of the flesh tissues manifests itself in three ways.

(a) It starts at the blossom end and works toward the stem end of the drupe, finally causing it to fall to the ground or dry out on the tree.

(b) The decomposition of the flesh cells and the destruction of their contents are first noted at the pit itself, from which point it works outward until it reaches the skin.

(c) The decomposition seems to start at the outer surface of the drupe in small isolated spots, from which it works inward until it reaches the pit. These markings resemble the wound made by a fine needle piercing the olive—generally at an angle—the decay taking place along the path thus made. There is no trace of the skin having been broken, though in some cases the irregular coloring at the external end of the path is noted.

It is claimed by some that in some cases large, fleshy olives, such as the Sevillano, Picholine, etc., are affected by these diseases. Investigation, however, convinced the writer that the decay referred to was the natural decay observed in the case of all over-ripe fleshy fruits, which should not be confused with the three "dry rots" above described.

These diseases seem to be restricted to certain varieties. While no names have thus far been given to the various kinds of dry rot above described, they may be distinguished by the names of the varieties of olives upon which they were first noted and are most commonly found; thus:

(a) The one that starts at the blossom end was first noted on the Nevadillo Blanco, though it also occurs on the Rubra and Pleureur de Grasse.

(b) This was first noted on the Manzanillo, but it is also found on the Obliza and on some of the large, fleshy olives.

(c) This form is found thus far only on the Columbella.

During the three months of investigation, the writer never once failed to find these diseases on the varieties above named. From Oroville to the Mexican frontier not a single Nevadillo Blanco, Manzanillo, Pleureur de Grasse, Obliza or Columbella was found that did not show the disease to a greater or less extent. In one orchard over 90% of the crop was destroyed, though the olives had scarcely turned color; the trees were Pleureur de Grasse, which usually has at least 250 pounds of fruit to the tree. In certain cases of isolated trees the rot was found.

The resident agent of the United States Department of Agriculture has taken the matter up and is testing certain washes from which good results are hoped for.

Prof. Hayne turns next to consideration of conditions which are unfavorable from a commercial point of view, and these will be outlined in our next issue.

THE FIELD.

Hop Growing in California.

NUMBER III—CONCLUDED.

By DANIEL FLINT of Sacramento in Farmer's Bulletin No. 115 of the U. S. Department of Agriculture.

BALING.—When the process of curing the hops is completed, they are prepared for shipment by pressing into bales. The press in general use on the Pacific coast produces a bale 20 inches square at the ends and 5 feet long, weighing from 175 to 250 pounds. It has a capacity of forty to seventy-five bales per day. The box is 20 inches wide, 5 feet long, and 8 to 10 feet deep, and is surrounded by a strong framework of scantlings. The baler is placed beneath the cooling room, a hole being cut in the floor as large as the mouth of the box, down which the hops are shoveled till the box is filled. Underneath the box, running lengthwise of the baler, is a 3-inch steel rod extending a short distance beyond the box at each end. On one end of this rod is fastened a wheel 10 feet in diameter through which the power of a team of horses is applied. On the rod are two 8-inch pinion wheels placed so as to just clear the ends of the box. These work into racks 4 inches wide, bolted firmly to two 4x4-inch 16-foot scantlings which work up and down. At the top these scantlings are hinged to the ends of a 4x12-inch cross-piece about 7 feet long. From this cross-piece drop two 4x4-inch pieces, 8 feet long, to the bottom of which is firmly fastened the follower which fits into the box and, as the power is applied by means of the rack and pinion, presses down the hops.

The lower part of each side of the box consists of a door hinged on its upper edge to one of the heavy horizontal pieces of the outer frame, and opening up-

ward and outward. When ready for operations, a piece of baling cloth is cut of proper size and placed in the bottom of the box. The doors of the baler are then closed and the box is filled. The hops are moved to the baler in a sort of small car, or a two-wheeled barrow, and about three times full make a bale. While filling the box, the hops are packed somewhat with a pole to the end of which is fastened a short piece of scantling. When the box is filled another piece of cloth is spread over the hops, the follower is swung into position, and the horses started. Four turns of the wheel bring the follower down as far as it should go. The doors are then opened and the edges of the upper and lower pieces of cloth brought together and sewed with a lock stitch. The bale is then removed from the press.

The power used in operating the press is transmitted by means of a heavy rope which runs over the large 10-foot wheel. Another rope runs over a similar wheel 3½ feet in diameter fastened on the outside of the large wheel. These ropes are arranged so as to work opposite to each other, one unwinding as the other winds up. The one running on the outside wheel is used to raise the follower after the bale is pressed.

The bales of hops should be stored in a cool, dark place. As the aroma is continually passing off, the bales should be as little exposed to drafts as possible. It is well to place on each bale by means of a stencil a small private mark, but the weight should not be put on, as it is liable to change with the weather, increasing in damp and decreasing in dry weather.

MARKETING.—The usual weight for a bale is 190 to 200 pounds. When sales are made a deduction of five pounds from each bale is made for "tare." Sales are usually made by sample.

In order to introduce California hops into England, the writer a few years ago shipped consignments to houses which were reputed to be reliable. For a time the results were satisfactory. But two of the houses went into bankruptcy and he failed to get returns for some 200 bales. Speaking from experience, the writer would advise against sending hops to England on consignment unless the shipper has some reliable person to handle them. The charges are many and unreasonable. To begin with, they deduct eight pounds for tare. Then they charge for weighing, sampling, storage, insurance, inspecting, cartage, commission, etc. In fact they seem to omit no possible opportunity for making a charge. In numerous instances a consignee has bought in the hops on his own account when he saw a prospect of a rise in price instead of giving the consignor the benefit of the advance. It is better policy for the grower to sell his hops at home even if he does not get quite the market price. Soon after the hops have been baled, say September, October, and November, is the best time to sell.

PRICES, WAGES AND EXPENSES.—The Price of Hops: The price of hops on the Pacific coast has ranged all the way from 5 cent to \$1.10 per pound, which amply illustrates the extreme variability and uncertainty on the business side of hop culture.

At 12 cents or less per pound, hop production involves a loss. At 15 to 20 cents, the grower can make a fair living and may get something ahead. It is the wide fluctuations in price that have caused so many failures in the business of hop culture. The price of \$1.10 per pound in 1882 proved a calamity to the legitimate grower. It led many to embark in the business with dreams of sudden wealth. Disaster to nearly all was the natural result.

WAGES.—Pickers get from 60 cents to \$1.10 per hundred pounds of green hops, the average being about 75 cents. The pay of good hop driers is \$2.50 to \$5 per day and board. That of helpers, where they assist in taking off and putting on the hops in the night, is \$1.25 per day and board. Field foremen get \$1.50 to \$2 per day and board. When contracts are made for growing hops (hand work alone), ready for picking, the price is \$10 to \$12 per acre. When the contract is for all work, including use of team in cultivating, the price is \$14 or \$15 per acre, owner to furnish teams and tools and make repairs, and the money to be advanced in equal monthly payments from February 1 to September 1.

In two instances in the writer's experience careful accounts have been kept to ascertain the actual cost of hop production. In the first, the picking, curing and baling of sixty-four acres cost \$2200; in the second, the same operations on forty acres cost \$1500, an average of about \$35 per acre.

EXPENSES.—For planting an acre, 2000 roots will cost \$20, and the expense of planting them is \$2.

The high wire trellis will cost from \$80 to \$90 per acre, and the cotton twine for support of hops \$3 per acre annually.

On an average it takes more than three and one-half pounds of green hops to make one of dry, and the cost of picking a pound of dry hops is about 3 cents.

A kiln sufficient to cure the crop from fifty acres, with everything complete, will cost \$3500 to \$4000, and for drying, about three-fourths of a cord of willow wood, worth \$4 to \$6 per cord, is required for every 1000 pounds of dry hops.

Of crude sulphur, costing 2 cents a pound, thirty to forty pounds must be used for every 1000 pounds of dry hops.

Each bale requires 5 yards of 24-ounce, 44-inch

baling cloth, which costs 8 to 10 cents per yard. Sewing twine costs 32 cents per pound.

Cost of shipment, when the product is marketed in England, is about \$1.50 per hundredweight.

CONCLUSION.—Requisites for Success: No person should embark in hop culture without the proper requisites for success in it. Among the first of these is the ownership of land that will produce hops suitable for the market. It is also well to have a fair amount of capital, for it takes cash to grow hops. In Germany, where there are so many yards of only one-half acre to three acres, expenses are light because but little outside help is employed. On the Pacific coast, where 10 to 300 acres of hops are grown by a single person or firm, hired labor is a heavy item of expense.

The Labor Question.—The large number of laborers required for the comparatively short picking season makes the labor supply a very important element in the successful prosecution of hop culture. Hundreds of acres of hops have been left unpicked owing to short supply of pickers. General prosperity in other lines of industry only aggravates the difficulty by giving permanent employment to the laborers. There is one remedy which may be safely recommended: Everything possible should be done to make hop picking respectable and popular so that white families who are in good circumstances will engage in it.

There is plenty of suitable land on the Pacific coast alone to grow all the hops consumed in the United States and leave a large surplus for export. Cost of transportation is one of the drawbacks at present, but improvement in this direction is to be expected in the normal course of trade development.

SHEEP AND WOOL.

Management of Breeding Ewes and Lambs.

By JAMES WITCOMBE of the Oregon Experiment Station in a Farmers' Bulletin of the U. S. Department of Agriculture.

WINTER MANAGEMENT OF BREEDING EWES.—Breeding ewes should be kept separated from the rest of the flock, and care should be exercised to prevent them from entering winter in an emaciated condition. The temptation is great for the farmer to put off the feeding of the flock to the latest possible period in the fall or winter. This, however, is a serious mistake, as the frozen, non-nutritious grasses are totally insufficient to sustain the bodily wants of the animal, and a rapid wasting of flesh too frequently ensues. The loss of flesh resulting from this treatment is always expensive to regain, as with reduced vitality comes impairment of the organs of digestion and assimilation. The time of changing from pasture to winter feed is often a critical period in the life of the sheep, especially so when no provision has been made to supply succulent feed in the form of roots and silage. An excellent plan to assist in modifying the injurious effects of these changed conditions is to commence feeding the flock light rations of oats upon the first appearance of severe autumn frosts. Surprisingly good results will be obtained by feeding one-half round of oats per head while the ewes are yet on pasture. This will keep them in good condition as well as familiarize them with trough feeding, which is no small item in preparing the flock to enter their winter quarters.

Much diversity of opinion prevails as to the advisability of the winter housing of sheep in this climate, but the preponderance of evidence based upon experience is decidedly adverse to a general practice of housing the mutton breeds. If housed at all it is best merely to provide an open shed for the purpose of keeping dry, for convenience in feeding, and for supplying comfort for the flock while eating. There should be no evil results following the proper housing of sheep. In a warm, humid winter climate close housing is entirely out of the question, and if adopted evil results will inevitably follow. If ewes of the large mutton breeds are to be housed, a floor space of at least 15 square feet for each ewe should be provided, and 20 or even 25 feet would be better.

Space at the feeding rack should be governed by the size of the ewes. Large ones, weighing from 175 to 225 pounds, require a space of 1½ feet. Smaller ones require proportionately less. For best results, the building should be cleaned out every day, as nothing is more repulsive to sheep or more injurious to their health than a befouled pen, from whose floor noxious gases are continually emanating. Especially will this be the case when succulent feed is being fed, as the excessive amount of liquid and semi-solid excretions will quickly develop a condition of absolute nastiness. The practice of covering this daily with fresh bedding is not to be commended, as the heat developed from their bodies when lying down causes foul gases to arise, which are inhaled by the sheep with baneful effects. This can in a measure be kept under control by the daily application of gypsum, but a thorough cleaning out of the pens every day will be found much more satisfactory in the end.

The amount and character of the feed given should be governed largely by the condition of the ewes, and, if for any reason they are permitted to enter their

winter quarters in thin condition, no time should be lost in getting them started on the road to improvement if a good crop of vigorous lambs is expected in the spring. If the ewes enter winter in good flesh, but little if any grain will be required until a few weeks before lambing time; hence it is the part of economy to have them in this condition at this particular season. All sudden changes of feed should be studiously avoided, and the flock should be brought by degrees to changed conditions. For ewes weighing 175 to 225 pounds a ration of three to four pounds of corn silage and two and a half pounds of nicely cured and not overripe clover or vetch hay will be ample to sustain them in prime condition up to within a couple of weeks of lambing. At this time for best results slightly less silage and hay can be fed, and a supplementary feed of one pound of equal parts of bran and oats may be added.

The ewes should have daily exercise, and a good plan is to drive them carefully some little distance to pasture that has not been heavily stocked during the summer, as they delight to roam over such ground to pick out the green and tender blades among the old dried grasses.

SPRING AND SUMMER MANAGEMENT OF EWES AND LAMBS.—When the season arrives for turning the ewes and lambs upon winter wheat or other pasture, the grain feed should be continued for some time, as well as a light ration of hay. This will counteract the oversucculency of the green feed and prevent possible derangements of the digestive organs. Lambs make a remarkable growth and matured sheep take on flesh very rapidly upon the wheat pastures. It is not unusual for lambs to make a daily gain of three-fourths to one pound for the first thirty days, and they frequently weigh from forty-five to fifty pounds at two months old.

A farmer living near Monmouth, Oregon, recently marketed a carload of lambs averaging 140 pounds. The age of these lambs ranged from six to eight months. They ran with their dams in the early spring on winter wheat and rape, and later in the season upon rape and clover. This is not an unusual weight for lambs in this section, reared under similar conditions.

As the time approaches for weaning the lambs ample provision should be made to guard against any possible check to them, as this is a critical period of their life. Weaning them upon rape and clover has given excellent results. The method employed was to provide a nice piece of rape adjacent to a good growth of second-crop clover, and when the lambs are turned in upon this they appear indifferent as to the loss of their dams.

THE EARLY MARKET LAMB AND THE DRAFT EWE.—The trade in the early market lamb has not developed into large proportions as yet in the Pacific Northwest, but with the ever-increasing population of our coast cities and the growing demand for this healthful and delicious meat, this branch of sheep husbandry is destined to become an important factor in the revenues of the farm. A good system for this work is to select in the early fall the ewes, that are intended to be retired from the flock and place them upon a good piece of pasture, rape being preferable. Arrange to have them lamb early, not later than the last of January. The winter management should be practically the same as for the breeding flock, except that a more liberal quantity of grain should be given after lambing. Adjoining the shed or yard in which the ewes are fed a place should be set apart for the lambs, so constructed as to admit the lambs but exclude the ewes.

In this space a trough should be placed so that the lambs can not get into it with their feet, and a mixture of bran and oil meal in the proportion of one of the latter to three of the former should be kept in it.

When the lambs are ready for shipment to market, as they should be at the age of six to eight weeks, the ewes from which they are taken should be given but little if any grain for a few days, or until the milk secretions are materially checked. As soon as they give evidence of drying up, commence to gradually increase the grain feed until it is brought up to quite a liberal amount. It is highly important at this juncture to expedite their preparation for market with all possible speed, as at this season fat aged ewes will command a better price than at any other time of the year.

FALL AND WINTER TREATMENT OF THE LAMB.—To secure perfect development in any animal, a steady, unchecked growth from the time of birth to the age of maturity must be maintained, hence this fact should be kept well in view when the lamb is expected to improve or even maintain the standard of the flock. Experience has taught many breeders that it is economy to supplement the summer pasture with a slight grain ration for lambs. Whether this system of summer feeding is adopted or not, grain or other concentrated nutritious foods should be fed early in the fall and continued throughout the winter. The best fall pastures that the farm affords should be selected for the lambs, and every precaution taken to have them enter the winter in the best of constitutional vigor and thrift. The winter treatment should be somewhat similar to that given the older members of the flock with the exception that, if it is within the range of possibilities, a greater variety of feed should be given them.

METEOROLOGICAL.

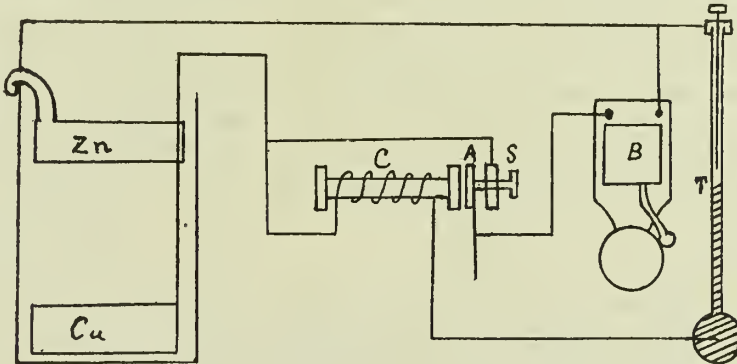
An Electric Frost Alarm.

Electric contrivances, which give alarm by ringing a bell at the approach of a low temperature, have been used to some extent by California fruit growers and have been described in the *PACIFIC RURAL PRESS*. The subject of such electric arrangement has recently been investigated by Prof. J. E. Bonebright, Meteorologist of the Idaho Experiment Station, and he has published a bulletin on the subject. The thermostat is not recommended, because a slight derangement renders it useless to any except an experienced mechanic or electrician. Prof. Bonebright pronounces the differential thermometer very good and easily adjusted and tested by anyone; but the apparatus which is illustrated herewith, and of which a description is taken from Prof. Bonebright's writings, is pronounced very satisfactory.

THE APPARATUS.—In order to protect against frosts, a warning should be given when the temperature has fallen not less than 8° or 10° F. above freezing. The apparatus described herewith will give warning, by the ring of a bell, when an exposed thermometer has fallen to a given temperature. The thermometer can be adjusted for any temperature, and can be placed anywhere in the orchard or field. The other parts can be put in the house, with the warning bell in a convenient place. The entire cost of the apparatus is from \$5 to \$7. From the following description, any electrician can make the apparatus, and a person not acquainted with electrical methods can put it in place:

DESCRIPTION OF APPARATUS.—The apparatus consists of a battery, relay coil, alarm bell and thermometer. The battery used is the common crow-foot cell used in telegraphing, size 6x8 inches.

The relay C is composed of two coils. Each coil



has an iron core 1½ inches long, ¼-inch in diameter, and is wound with No. 24 B. & S. double cotton-covered magnetic wire, to a depth of ¼-inch. The coils are wound right and left-handed and are placed horizontally.

The armature A consists of an upright piece with a crossbar of soft iron, which is so held that it is attracted by the iron cores of the coils when magnetized. An adjustable spring holds the armature A against the screw S when no current is flowing through the coil C. The maker should put on the base of the coil binding posts marked with the connections, as given in Fig. 1. A 50-cent door bell will answer for the alarm.

The thermometer consists of a glass stem 8 or 10 inches long, with an internal diameter of approximately ⅛-inch (1 cm), attached to a bulb which has a diameter of 1 inch (25 cm). The bulb and 2 or 3 inches of the lower part of the tube are filled with mercury, and the tube is graduated for every 10° from 30° to 100° F. Electrical connection with the mercury is made by a platinum wire blown in the glass. On the top of the stem is a brass cap with a No. 30 B. & S. bare copper wire passing through it and making contact with the mercury. The thermometer can be tested at any time by comparing it with an accurate Fahrenheit thermometer. It is made large in order to give free action to the mercury around the wire in the tube.

TO PUT THE APPARATUS IN PLACE.—To prepare the battery place the copper and zinc in a glass jar, as in the cut, and put copper sulphate crystals (blue vitriol) in the jar to the depth of 1 inch. Fill the jar with water, being sure to cover the zinc, and connect the wire from the copper to the zinc. At the end of twenty-four hours the battery will be ready for use. The battery can be prepared for immediate use by filling it to the zinc with water and then covering the zinc with the solution surrounding the zinc of a similar battery which is in good running condition.

The thermometer should be freely exposed not more than 2 or 3 feet above the ground in that portion of the orchard most liable to frost, usually the lower ground.

The lower point of the copper wire in the tube of the thermometer should be set opposite the number indicating the temperature for which the instrument is to give warning, usually 40° to 45° F. A copper

wire, No. 16 B. & S., connects the wire in the stem of the thermometer to one post of the bell and to one pole of the battery; another wire connects the mercury in the bulb with the proper binding post of the coil, and a third wire is run from the armature of the relay to the remaining binding post of the bell. The remaining pole of the battery is then connected to the properly marked post of the coil. It is well to test the connections by seeing that the bell rings when the thermometer circuit is broken.

The action of the instrument is very simple. When the wire in the stem of the thermometer is in contact with the mercury, a current of electricity will pass through the relay coils, causing the armature to be attached to the iron cores. The battery furnishes a continuous current and will keep the armature in this position until the circuit is broken. When the circuit is broken by the mercury falling below the lower point of the wire in the thermometer, the armature will be drawn by the spring against the screw S, which puts the bell in a circuit with the battery. This condition is shown in the cut. The wires used in connecting up the apparatus should be insulated by fastening them to wooden supports. It should be noticed that the bell will give warning of the breaking of one of the wires leading to the thermometer. In case the thermometer is more than 150 feet from the battery, two cells should be connected in series, i. e., the copper of one cell connected with the zinc of the other. In any case where one cell is not strong enough, two in series should be used.

Since the instrument can be set for any temperature, it can be put to practical use in the greenhouses, incubators and in any place where a warning of low temperature is desired.

ANY ONE having made an invention in order to obtain a patent therefor must execute and file in the Patent Office an application for the same, together with \$15, the first Government fee. An application consists of a petition setting forth the invention and praying for the grant of the letters patent, a specification describing the invention, specifically claiming the new features, a drawing illustrating the invention, and an oath which must set forth that the invention has not been in public use or on sale or described in any publication for more than two years before the date of the application, and for which no foreign patent has been granted for more than seven months. Upon the receipt of the application it is sent to one of the thirty-six divisions of the Patent Office to which by its nature it belongs. In due course it is taken up for examination to determine whether it is new and useful. If found to be new, an application is allowed the applicant. He is notified thereof and is given six months in which to pay the final Government fee of \$20, and the patent is issued within three weeks after the final bill is paid. If the application is found to lack novelty a letter is written to the applicant, pointing out the objections and referring him to any prior patents or publications which may have a bearing on the case. A patent, if for a mechanical invention, is granted for seventeen years. Other patents are granted for three and one-half, seven and fourteen years, the Government fee being respectively \$10, \$15 and \$30. To get things right it is well to employ a competent and experienced patent lawyer.

WOOD-CUTTING TOOLS are usually made somewhat softer and with more of a spring temper than the thicker edge of metal-cutting tools. The process is the same for both, but the temper is drawn lower or to a bluish tint. For wood-cutting tools hardened in oil a slow fire should be used, so as not to burn the corners and edges by overheating. Heat to a cherry red and quickly plunge, edge first, in the oil bath. While the thick part of the tool is still hot, place it over the fire and slowly heat until the oil takes fire, then plunge again in the oil bath or water. The bluing process of tempering is much used, and is done by cleaning the surface of the hardened part of the tool with emery paper and then heating by contact with a piece of redhot iron just back of the cutting edge. When the color has reached the blue tint, plunge it in water.

WATER with an 8-foot fall flowing 30 cubic feet per minute would, theoretically, give $\frac{5}{8}$ H. P., practically, about 80% of that, or $\frac{1}{4}$ H. P. Knowing the pressure in pounds per square foot—styled P—and the volume displaced in cubic feet per minute—styled V—the theoretical horse power may always be found by the formula $H. P. = \frac{P \times V}{33000}$. In the case specified $P = 62.5 \times 8 = 500$

lbs. per square foot, so $H = \frac{500 \times 30}{33000}$, or $\frac{15000}{33000}$, or $\frac{5}{11}$ H. P.

The actual horse power would depend upon the efficiency of the motor.

IN operating a siphon the lower end of the discharge arm must constantly be below the level of the water in the supply basin. When the weight of the water per square inch of sectional area in the up-tube equals the atmospheric pressure per square inch on the water in the supply basin, the siphon will cease to flow. Theoretically, the atmospheric pressure will support a column of water 34 feet high, as the weight of such a column of water 1

ONE way to tell what a boiler is doing is to find the number of pounds of water evaporated per hour: 30 pounds from feed at 100° F., evaporated into steam at 70 pounds pressure, or its equivalent under different conditions, constitute 1 H. P.

THE HOME CIRCLE.

The Midnight Minuet.

It is dark and dull and gloomy, with its windows facing north,
This the old colonial mansion from its ivy peering forth.
There's a flintlock o'er the mantel, and a flag above the door,
And a harp with strings that dangle in the dust upon the floor.
But when falls the purple twilight, then the silver sconces flare,
Comes a hand upon the knocker, and a step upon the stair.
And as she courtesies from the threshold in her sweet, patrician grace,
As he grounds his moldy musket by the fireless chimney place.

Here and there the yellow laces from her sleeves have dropped away,
And her pearls have lost their luster in the darkness and decay;
Brown and scintless are the roses that are clustered on her breast,
But her gown is gold embroidered, and her hair with powder dressed.
He is clad in tattered garments that were once of buff and blue,
On his temples is a bandage where the blood is oozing through;
Sash and plume are grimed with battle, spur and saber rod with rust—
But the harp is faintly sounding from its covering of dust.

It is played by unseen fingers that with touches soft and low
Gently wake the mournful music of a century ago;
Quaint old tunes that were in fashion in the days of patch and puff,
Periwigs and ostrich feathers, laced cravats and perfumed snuff;
And they walk with prim precision through the stately minuet,
Though her faded satin slippers with the grave dews glisten wet,
And he moves a little stiffly, since beneath the flower and vine
He has slept a hundred summers on the field of Brandywine.

Hark! The ancient clock is striking in the dim, deserted hall,
Slowly, as with age grown weary, twelve deliberate strokes in all,
And the tinkling harp is silent, and the lady lifts her train,
And the soldier takes the musket to his shoulder once again;
Dies the candle in the socket, loudly creaks the crumbling stair,
Swings the door on broken hinges with a rush of chilly air.
But the mouse behind the curtain and the spider in her net
Still remain to tell the story of the midnight minuet.

—Munsey's Magazine.

The Heroism of Hortense.

Hortense had always been called the pet of the village of Harmouth, where the eighteen years of her happy life had been passed. It could not entirely be accounted for by the fact that she was the youngest daughter of their favorite minister, whose wife had died at the birth of this tiny life; it was more because of the child's pretty face and happy disposition that she had won for herself the love of those simple-hearted villagers. Hortense, although she had been deprived of her mother, had not also lost the mother-care and love that had been showered on her from earliest infancy by the dear old colored "mammy" who had served Hortense's mother before her.

To Rev. Mr. Everatts, after a long day of work in his study or tedious visits to the poor of the village, it was a source of the keenest pleasure to watch the little child playing in the garden or romping with Rover in the yard. He liked to think as he leaned back in his great armchair, of the time when Hortense would be grown up, and hoped she would be in all things like that dear one who had passed over that this little life might breathe its song to the world. For the minister had devotedly loved Hortense's mother, and had thought her all things good and beautiful, and was therefore thankful that every day his daughter grew more like her mother. Hortense's brothers and sisters were all married and gone from the hearthside, leaving the master with no one at home to love and caress but her. She often accom-

panied her father on his expeditions to the poor, and it was her delight to carry the basket containing food or clothes gathered up by the black mammy, which she distributed wherever her papa thought best.

Hortense had always been an exceedingly beautiful child, but as a young lady of eighteen summers she was as beautiful a lady to look upon as one could wish to behold. They were all proud of her beauty; they felt as if it too belonged to them, as did seemingly the life and services of the maid, who devoted so much of her time and thoughts to their welfare.

Hortense had been away all that summer. Early in the spring her aunt had sent her an urgent invitation to accompany herself and daughter on a trip through Europe; so, after a good deal of urging on the part of the home folks, she consented to join her cousin and aunt. And now fall has come and Hortense with it, looking fresher and prettier than ever as she drove up from the depot with her papa and Jack.

Of course you do not know who Jack is, but that is because you do not live in Harmouth. Everybody there felt well acquainted with Jack, because Jack was Hortense's dearest friend. She had promised to become Jack's wife sometime, and since that made the girl happy, everybody else was happy too, and went about their work as if they carried some weighty and wonderful secret, when really everybody knew all about the great event that was to be. Jack was a very good fellow who lived in New York, and had met Hortense in that city years ago when she was a little girl visiting her aunt there, and had formed a boyish attachment which followed him into manhood and would be satisfied with nothing less than Hortense herself. What long delightful letters she had written to him from Europe telling all about her journeyings in the queer old place and of the dazzling delight of Paris, Italy and Switzerland.

Hortense had thought that the village looked strangely deserted and empty as she rode through it, but that, she reasoned, must be because she had become accustomed to the great crowds of the big cities she had visited; but when she arrived at home and noticed how queer the dear mammy acted and her papa, too, seemed uneasy about something; she questioned them about her feeling, and then it was that she learned something which was to cause her sorrow for many years to come.

"My daughter," began Mr. Everatts, taking his child in his arms, "I had not intended that you should know of the disaster that has come to our village, my dear, for I had written to your uncle to keep you in New York until after the trouble was over, but I presume the letter did not reach him in time. Perhaps no harm will be done, however, as we will send you back by the next train. Hortense, my dear, our town has been stricken with smallpox, and there are many, very many, who are afflicted with the dread disease. Those who are not have left the town, and so there are very few left to take care of the sick. But do not be nervous, my dear, for we will let no harm come to you, and you must return immediately, either to your aunt's in New York or some nearer place of refuge."

"Why, you dear old papa," answered Hortense, laughing, "do you think I'm afraid? Of course not! I am not going to go away and leave you and mammy here with no one to help you, and all the other folks too. No indeed; that would be too selfish. I am so, so sorry for the poor people; I will put off my things and go right out and see if there is anything I can do to help." And Hortense started for her room to put on her working-day clothes.

"Hortense, stop!" called Jack, who heard with horror of her intention to go among the smallpox patients and nurse them. He had been very much excited all the time that her father had been telling them of the matter, and could hardly wait for the next train that would carry his precious one to safety from that terrible disease. "You do not know what you are say-

ing, dear. Of course you can't leave the house until we start for the depot. Come, dear, sit down, and we will have a pleasant time visiting with your father until we must go." And Jack brought Hortense back into the room.

"Jack is right, my dear. Of course you must not dream of staying, though it is like your unselfish self," said Mr. Everatts, sadly smiling as he noticed the look of disappointment in his daughter's lovely face.

"Why, papa," replied Hortense in a trembling voice, as she came up to Jack and put her hand in his, "you surely would not have me be so selfish and unkind as to let all my friends who are helpless now go unattended especially when you say that the well ones have left the place. No, dear papa, it is plainly my duty to stay and help. You won't send me away, will you?"

"My child, you must try and realize that the cases are very serious. Not only would my little girl's sweet face be ruined, but she might die if she should be so rash as to expose herself. I must stay with my people, of course; but, dear, I am a man, and it does not matter if my old face is scratched and scarred, but it would break my heart if anything should happen to my darling. I am deeply grieved that so many of my flock have been willing to rush out of the town and leave behind so much suffering," and the minister bowed his head with the weight of anxiety.

"Come, sweetheart, let's don't talk about the disagreeable thing any more; we'll go in the garden and get some fresh air. I feel suffocated at the mere thought of my queen's having the smallpox," said Jack.

"No, Jackie, dear, you must not try to make me shirk my duty. If it is right for papa to stay, it is right for his daughter too. Forgive me, darling, for displeasing you or giving you one moment's pain, but can't you see I must? There is no escape without dishonor." And, turning to her father, she said: "Now, listen to me, you who have always been so kind and good; you won't refuse this dearest wish of my life, will you, daddy, dear? If it was wrong for those other people to desert in the hour of need, how much worse would it be for me, a minister's daughter—I, who have always helped them in sickness and have loved them so long, little children and old women alike."

Hortense's face was illumined with a great spiritual light as she stood pleading with her father for the right to make the great sacrifice. "My father, you have always been so proud of my pretty face, and have liked to hear me called all that was beautiful and lovely; but papa, dear, if I should go away now and leave to die many persons that might have been saved with a little help from me, to lives of usefulness and goodness, do you think that then I could ever look into the glass again, could ever hear words of praise of my beauty without hating, despising the face reflected to me by my mirror and admired by my friends? It is you who have taught me of the beauty of the soul, that which surpasses all outward signs; only that is of consequence, and think you I could go to my Master with such a stain on my character? Oh, it would be too cruel and base. Say that I may—"

"Hortense, you are mad!" exclaimed Jack, as he paced the floor in irritation at her words. "Don't say another word. You cannot sacrifice yourself thus. I will not allow it; besides, do you think I want an ugly poek-marked creature for a wife? So stop this nonsense. I will not listen to it longer."

"Jack!" With one loud cry as from some being that had been wounded mortally she uttered his name, and in that moment the happy care-free girlhood in her died and with terrified eyes she gazed on the lover who had crushed her. But it was only for a moment that she looked. In the next instant, with blazing eyes and head thrown back and hand tightly clasped, she said: "Jack, if it is only for my face alone you love me, then I do not wish to marry, either. But, oh, I had thought—Good-by!" And the poor broken heart went quickly from the room, not

heading Jack's cry to come back, that she must go with him. Seeing or heeding nothing but the pain in her heart, she hurried on.

Jack, in a frenzy at what he had done, seized his hat and ran to the depot, not waiting even to look at the poor old minister, who seemed as though all the brightness of life had been taken from him too. "Hortense will surely come to her senses soon; she would not be so cruel as to break both our hearts for these ridiculous villagers who would not do as much for her."

When Hortense reached her room she knelt down by her bed to pray for strength to bear up under her trouble, the greatest that she had ever known in her young life; it so overpowered her that she feared she would lose consciousness, and she prayed with all her strength. She never wavered for one moment in her resolution to do what she thought her duty. She needed not even to say to herself, as was her custom—"What would Jesus do?" She could see no other way, though after the first effect of her sorrowful blow was over she wept many bitter tears that she must soon lose her comeliness. Not that she was vain—far from it; but it is hard, very hard, willingly to give up that which is so charming in a woman, her beauty; but with one long, lingering look in the glass she vowed not to think of that side of the question again, for if people could not love her for herself alone then she must go unloved, that was all. But oh, if it just might not have been; but as fate had willed otherwise she would bow to its decree.

Few villages in this country have been stricken with that frightful plague as was Harmouth. Need indeed was there for many helping hands. At the first outbreak pest-houses had been built, and places were quarantined, but with the cold wave the disease had spread, and the village was deserted and residents who could possibly do so fled, until there was no need of a pest-house being built, for all could now be turned into hospitals. A few nurses had been sent down from the cities by the doctors, but they were in much demand at other places too; so Hortense found much to do and was never idle for one moment, as she went from one patient to the other, sometimes accompanied by her father, who, though his heart was breaking while he gave permission for her to do the work, blessed her for her noble willingness "to do the duty that lies nearest, well assured that its faithful performance is the best preparation for the hours and the ages that are to follow."

Many were the poor unfortunates that were laid in their graves by those quiet workers, some of them deserted even by their own family. And how they all loved the beautiful maid who ministered to their comfort as she went among them smoothing a pillow here, giving a glass of water to fevered lips there, and everywhere shedding the light and sunshine of her grand soul, so that they felt when she was near as if in the presence of some great spirit of goodness. The patients fairly worshipped her and called her "the angel"; the sick and well alike vowed to devote the rest of their lives to her happiness if only they and she were spared. Every night they prayed that she might not be stricken too. One little girl would say, "Dear Lord, if some one must die, take me, but please do not let anything harm our angel." And it seemed as if their prayers were to be answered as weeks went by and those who did not die slowly but surely recovered. But alas! when all but one was up the news spread through the village that "the angel," too, had succumbed like the rest, and their dear Hortense, despite their prayers, was lying ill with smallpox. But if their supplications had not been answered in full, at least they were glad to know that she was only attacked lightly, and that she would surely recover, and all during her illness she was watched over by the entire population, and if she had been indeed the angel she seemed she could not have been more tenderly cared for.

At last the happy day came, and the doctor said she was cured, and her

farther had handed her a letter that had been received some days ago from Jack, imploring her to forgive him and promise once again to let him live for her, saying that no matter what happened nothing could make her ugly; that her beauty of soul would shine forth as the sun from behind a cloud. And it was even so; nothing could make that face "ugly," for in spite of those marks she was yet beautiful.

Jack begged to be permitted to come to her as soon as she had recovered, but this Hortense would not consent to; that was more of a sacrifice to her pride than she felt compelled to make, and getting her father's consent she decided to go and live with her grandmother in another part of the country for two years, for the doctor told her that by that time the face would outgrow the marks and be as smooth as ever.

Never once in the long years of her life did Hortense regret the sacrifice she had made, but continued to live as she had begun by doing to others as she would that they should do unto her, and ever in the little village she was beloved and called "the angel."

Run, Girls, Run.

"I never knew a young woman who had any aspirations as a sprinter," said a prominent physician, "but if the girls could be made to understand how conducive running is to beauty I believe that running races would become the favorite amusements of female seminaries, young women's clubs and other organizations composed of young women. Running is the great beautifier of figure and movement. It gives muscular development, strong heart action and free lung play. It was running that made the Greek figure, and the same exercise would produce now the same figure that made the Greeks famous for beauty."

How to Grow Stout.

Columns of conflicting advice have been written from time to time for the benefit of women who wish to get thin, and as it is not enough for the woman who desires to put on a little extra flesh to draw her conclusions from the reverse side of the fleshy woman's instructions, she is coming in for a goodly share of counsel, too. The simple recipe: "Eat vegetables and plenty of butter; drink milk, take cod liver oil, go to bed early, sleep some during each day, and laugh as much as possible," will often help the thin woman immensely. Cream may be substituted for the cod liver oil if preferred.

New Zealand's Amazons.

Probably the most novel regiment ever raised is that which has been recently formed at Wellington, New Zealand. The ladies of Wellington have formed themselves into a corps which has been given the appropriate title of the New Zealand Amazons. They are girls of fine physique, being much above the average in height. The regiment is drilled according to military schedule, and their maneuvers have attracted considerable attention in the whole of the colony.

In olden times, when men were much in the open air and hats couldn't be bought for half a dollar, it was the habit to tie a cord around the crown and let the ends fall on the left side, to be grasped on the arising of a squall. They fell on the left side so they might be grasped by the left hand, the right usually being more usefully engaged. Later on the ends got to be tied in a bow, and later still they became useless; yet the bow has remained and will probably remain till the next deluge, or something of the sort.

In olden days, when tea was a rare and precious luxury, silver strainers were used, into which the exhausted leaves were put when they were well watered and drained. They were afterward eaten with sugar on bread and butter. This fact is recorded by Sir Walter Scott in "St. Ronan's Well."

What to Drink.

Endurance under long continued effort is best secured by athletes, soldiers, travelers and workers, through abstinence, as a rule, from every beverage except milk and water. Coffee may be taken for breakfast, and tea for supper, or after hard exertion, except under certain conditions, states a writer in *Mayflower*. The temptation is great to drink too much, and to drink the wrong things.

The less the hunter drinks while in the fields, or the athlete while training, or the soldier while marching, or the farmer while busy with his crops, the greater his vitality and the less he suffers. It is a good practice for the warm and thirsty man to moisten his lips and rinse his mouth with water. The heat of his body is gradually relieved by a judicious bath. But the less the actual quantity of liquids taken, after the actual demand of the system is supplied the better.

Above all, the use of fermented and spirituous liquors should be strictly avoided. The man who drinks water, milk, tea and coffee only, will walk, row, ride and work longer than the man who drinks beer, wine, or spirits. It has been tried in the army, in mountain climbing and in sports. The fact is established. Alcoholic drinks not only impair the general vitality and alertness of a man, but they actually shorten life as well as give rise to most of the crimes, immorality and misery of the day.

The statistics in possession of the life insurance companies show that the habitual user of alcoholic drinks at thirty years of age has a probability of living only fifteen years more; if he is forty, his chance of life is twelve more years. Whereas, the man who drinks water or milk only, with perhaps coffee for breakfast and tea at supper, has at thirty the promise of thirty-five years more of life; at forty he has the promise of twenty-eight years more.

The King of Berries.

"What is so rare as a day in June?"

The "rareness" of a day in June is not entirely limited to bird-song and floral fragrance and golden sunshine. The month of roses is also the month of berries. Fruit is the "flower of commodity." No other of all the Creator's works combines to so great an extent both beauty and utility. To the ardent lover of berries none contains such a combination of all that delights the senses of smell, sight and taste as the strawberry—the earliest of Nature's treasures. Nought but praise is heard for this fruit, from the humble little vagabond berry growing wild in meadow or pasture to the coddled prize-winner of some fruit specialist.

The wholesomeness of strawberries is not generally understood. They are regarded as a pleasing supplement to nourishing food rather than as a salutary adjunct to the bill of fare. Coming in the spring, when the system is sluggish, the acid of this berry probably fills a more important place in the human economy than is usually recognized. Many years ago Linnæus declared that gout might be prevented by a free use of strawberries night and morning, while later times have proved strawberries to be especially beneficial to persons of anæmic or rheumatic tendencies. Often the demon biliousness may be more surely routed by a generous allowance of fresh ripe strawberries than by a drug course. These berries have in some cases proved an antidote to the poison of malaria. The acid in strawberries is combined with soda and potash, forming two alkaline salts, which are opposed to the acid secretions in these ailments.—*Self Culture Magazine*.

Nor only in number but also in point of territory the circulation of the Bible exceeds all other books. The American Bible Society has printed it in 300 tongues. Thousands of copies even now are traveling through the frozen polar regions to people who have not only never heard of the book, but to whom books are unknown.

The Four-Leaf Clover.

One leaf is for hope, and one for faith,
and one is for love, you know;
And God put another one in for luck,
If you search you will find where they grow.
—Emily Dickinson.

Nervousness.

Very frequently we hear people say, "Doctor, there is nothing the matter with me, only I'm nervous," or "I am perfectly well every other way, but I cannot sleep. If I could just get rid of this nervousness and sleeplessness I would be all right." Patients seem to think that these conditions are due simply to some disturbances of the nervous system, and if they can only get something that will tone up the nerves, or quiet them down, they will be all right.

Dr. Moran says: Disorders of the nervous system do not usually spring up independent of the condition of other organs of the body. In fact, the great majority of nervous symptoms from which people commonly suffer are caused reflexly from the disordered state of some other organ of the body, and in order to secure permanent relief the cause of the irritation must be sought out and removed.

While there are many factors in the cause of the greatly increasing amount of nervousness within recent years, we are convinced that the great majority of such ills are due to a disordered state of the organs of digestion. In every case of indigestion the food is, to a greater or less extent, converted into poisons which are absorbed into the blood, producing a morbid condition of the brain and nerves. It is evident, then, if one is to get rid of these unpleasant symptoms, there must be something more than simply palliative treatment. There must be such a regulation of the diet and the habits of life, together with well-directed treatment, as will entirely remove the cause of these morbid conditions.

A Dog Story.

Many and various are the stories told about St. Bernard dogs. Not a family that owns one but could tell of the dog's bravery and courage. One day while a gentleman was eating his dinner he heard his dog barking furiously, and arose to see what was the matter. On the lawn outside he saw the dog holding a man by his clothes to prevent his leaving, and barking all the while. The gentleman called the dog away, and told the man he would pay for the damage the dog had done. Then he scolded the dog severely and took him into the house. When the gentleman went upstairs he found all his money and jewelry had been stolen. The man had taken it, and the dog was trying to hold him so that he could not get away. Of course, the gentleman felt sorry he had so misjudged his dog, and tried to make up for the scolding by kindness.

THERE are many kinds of silver polish upon the market, but about the best, after all, and the base of most of them, is the old French waiting, which taken in its purity may be used without danger of injury to silver. If there is any question as to the purity of the whiting it should be sifted through a hair sieve or piece of muslin before being used. It is then wet with water or alcohol—the latter giving a specially brilliant effect—taken upon a soft rag, the article thoroughly but carefully rubbed over. The surplus is then wiped away with a soft cloth, a proper brush is used to remove any traces of whiting from the chasing, and the article is lightly polished.

THE stoves of the Bolivian Indians are queer things. A hole is dug in the ground about 18 inches deep and 1 foot square, and over this is built a roof of clay, with holes of different sizes to receive the various cooking pots. Roasting is done on spits passed through the holes, so that the meat comes out very much smoked, unless great care is taken to have only live coals at the bottom of the oven.

DOMESTIC ECONOMY.

Domestic Hints.

BROWN CORN CAKES.—Scald one pint of fine corn meal till all wet, then add cold water till a little thicker than griddle cakes. Add a pinch of salt. Brown in butter or salt pork fat on both sides, then put them in the oven on the grate for fifteen minutes to become crisp.

CHOCOLATE CAKE.—Take a quarter of a pound of butter, beat to a cream, add the yolks of six eggs, half a pound of sugar, and stir for half an hour. Then add a quarter of a pound of grated chocolate, two teaspoonfuls of cocoa powder, some vanilla flavoring, three and a half ounces of cornstarch, and finally the snow of the whites of six eggs. Bake in a hot oven. It will take about three-quarters of an hour.

SPONGE CAKE.—An excellent, quickly made and cheap sponge cake has for one ingredient boiling water. Beat the whites and yolks of five eggs separately, reserving one white for icing. To the yolks when light beat in thoroughly two cupfuls of granulated sugar, the grated rind and a few drops of the juice of half a lemon. Stir in the whites lightly and two scant cupfuls of sifted flour, into which two teaspoonfuls of baking powder and a saltspoonful of salt have been sifted. Last of all add one cupful of boiling water. Pour into an oblong pan and bake about forty minutes in a moderate oven.

CHARLOTTE RUSSE.—Make a sponge cake by the following rule: Six eggs, one cup sugar, one cup flour, one teaspoonful baking powder, a little salt, and lemon extract; beat the yolks light and mix thoroughly with the sugar, then add half the flour (with baking powder sifted through it) and half of the well-beaten whites; beat well and add remainder of flour and eggs; bake to a golden brown. Beat one pint sweet cream and the whites of three eggs to a stiff froth; sweeten and flavor the cream to taste. The cream and eggs must first be beaten separately. Blanch and split two dozen almonds and place them on the cake, then pour over the cream and eggs.

Hints to Housekeepers.

A frequent cause of the oiliness on the outside of lamps is that the wick is kept too high when unlighted. It should be remembered that the wick draws the oil to the surface, and, if it projects too far above the burner, it will soon accumulate oil there, which will find its way slowly over the outside.

To mend glass, pound flint glass as fine as possible in a stone mortar or on a painter's stone. Mix it with the unbeaten white of an egg. Rub the mixture on the edges and bind together, having fitted the pieces carefully. Set aside for some days or weeks, and one can scarcely discern the crack at all. It will not come apart.

For rhubarb jelly the stalks are cut and stewed gently until tender. To a quart of the rhubarb a pint of sugar and a little more than half a box of gelatine is allowed. Soak the gelatine in a little cold water and add to the rhubarb while the latter is warm, rubbing the mixture through a sieve; pour into a warm mold and serve with whipped cream. When the stalks are young and tender the rhubarb need not be peeled.

The best shape for a chamois powder bag is a flat, circular one, formed of two circular pieces of chamois skin about 3 inches across. Sew together to make a flat piece. Fill the bag and perforate it. To make the cover, crochet two little mats of white silk, a trifle larger than chamois skins. Add to one of the mats a pretty border in rose and white or pale blue and white, or pale yellow, as you fancy. Lay the bag of chamois skin on the bordered mat and fasten it down with the unbordered mat, using a row of No. 1 ribbon to face it down in place through the meshes of the crochet work. The ribbon should match the color of the border and should be tied in a little bow at one side.

SHARPLES**Cream Separators.**

Farmers should realize that all the fertilizing value of milk (the part that lifts the mortgage) is in the skim milk, not in the cream. Fresh, warm skim milk from a Sharples Farm Separator is worth full 22c per hundred for feed. Stale, sour milk loses its value. The difference is profit or loss in the business. Then Sharples Separators make better butter, more of it. Get our catalog No. 31. It gives the points.



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FRUIT MARKETING.**Cost and Returns of Orange Growing.**

By E. W. HOLMES, Before the Horticultural Club of Riverside.

I have been asked by your committee to speak upon the subject of exaggeration of the profit of orange growing. The task assigned is not altogether a pleasant one, for no one likes to say that which may possibly tend to depreciate the saleable value of his only property. But though the pessimistic role is not to my liking, I will play it, since it seems a duty for this club, constituted exclusively of those who follow horticulture for love of it as well as for a livelihood, to remind the public that the extravagance of the speculators may work permanent injury to the business.

It must be confessed that in the mad scramble for wealth in which Americans are pretty generally engaged, those who appear most successful are such as plunge headlong, with unlimited faith in the future. The ranks of the millionaires are largely recruited from the sanguine, the optimistic. In spite of the certain disaster sure to come to the large majority of those who venture into danger for gold, the army of gold seekers never lacks recruits. The glamour which the tales of occasional exceptional success throw over the hardships to be encountered and the risks to be run deter but few, and the failure and death which come to the larger number are forgotten. It is often remarked, in referring to exceptional profits in orange growing, that the orchard property is "good as a gold mine." This comparison is, I believe, truer than the ordinary user of it suspects. Orange groves and gold mines are not all equally profitable, and the percentage of unprofitable mining claims is now larger than the unprofitable orchard, because we have not yet reached the maximum production in the case of the latter. There has never been a time when there was an oversupply of gold, but there have been many cases where the safe limit of production has been reached with different kinds of perishable fruit.

Those who would unduly boom the orange industry are not ignorant of the history of horticulture. There have been too many sad experiences with the raisin, the prune, the olive, etc., in this State to fully prove the absurdity of the arguments so many times put forth by this class to prove the impossibility of over-production. Those of us who have the product of a lifetime of labor invested in what we hope to make a permanent source of profit to maintain us in old age, are certainly justified in protesting against the misuse of figures tending to create false notions of the future of the business. The statements alluded to are not always untrue. In many cases the marvelous

returns quoted concerning the income obtained from specially fine orchards are justified, and only where the sensational journalist—and in these times he is thought an old foggy newspaper man who is not a sensationalist—refers to the income named as net profit, when, in fact, the subtraction of the actual cost of production and marketing would surprisingly reduce the sum to be named as profit.

It is to be hoped that we may maintain the citrus industry on so safe a level as to enable those who have wisely invested, and who exercise ordinary economy and good sense in the treatment of their groves and practical methods in marketing, to obtain as sure and satisfactory returns as are obtained in all other regular and legitimate callings. That it can hope to do better, in the long run, I have never believed. That it shall do as well, will depend not alone on climatic adaptability, but upon the shrewd conservatism, industry and persistence of those engaged in it.

The business of fruit growing in this most excellent climate is one that has great attraction for the intelligent and well-to-do. It needs no exaggeration of the profits possible to induce an increase. There is no business more tempting to the lover of an outdoor life where the conditions make possible all those attractive features characteristic of town life in this age of progress.

It is perfectly natural that the projectors of new colony enterprises, noting the marvelous success and growth of the orange growing section, of which Riverside is the most conspicuous example, should select and reprint, to boom their enterprises, all the highly colored statements to be found concerning the profits of orange growing. It is to be expected that men or companies having large areas planted for the purpose of sale should give the most favorable statements obtainable regarding the income to be expected from such investment. That nurserymen with much capital invested should hold optimistic views regarding the advisability of further planting is natural. Newspapers, depending for advertising patronage upon such interests, and much less so from the ordinary orchardist, would fail to obtain a needed revenue if they did not encourage the attitude of these various interests; and they would have justification in so doing, in the feeling that in encouraging larger investments they were helping the upbuilding of the State.

I am not disposed, nor would it be honest to deny the truth of many statements showing the wonderful returns obtained by orange growers during the past season. It is a source of gratification that nearly everybody has done well during this peculiarly fortunate season. It is gratifying to know that even in the bad years, when short crops were common or the demands of the market were not all that could be desired, there were those who, by their superior intelligence or ampler means, were able to obtain so high a degree of success.

But the figures generally printed are, as a rule, misleading, either unintentionally or for speculative purposes. They do not generally represent net profits. They are not average results under even favorable conditions, and when true have been obtained through management which the incompetent or slothful owner can never hope to equal.

Witnesses, whose statements before the Interstate Commerce Commission would have been modified had they had experience with the management of old groves, testified that the annual cost of producing a crop worth \$500 an acre was about \$60 annually. Those who have paid almost that sum for fertilizer alone each year, understand more clearly the error of such a statement than can the tyro who obtains handsome dividends from soil where nature's supply of the necessary elements have not yet been exhausted.

The big figures obtained the present season are exceptional—due to the country's wonderfully prosperous business conditions; to the further fact that all of the immense crop was sound, juicy and sweet; and still further, to the tariff, which has shut out much of the foreign fruit, and to the absence of a

large Florida crop. For the first time for years we have had a large crop of perfect fruit to supply to a market entirely our own. That so gratifying a result of our year's work should be the outcome is not strange. That it shall be permanent is impossible. It has shown the possibilities of our orchards under all favorable conditions; let it not mislead us into the notion that with large increase of the productive area in this State and in Florida we can depend upon such returns, or allow such an idea to prevail without protest.

It has been shown this season, as before, that the older orchards, where maintained in the highest possible condition by the use of expensive fertilizers and costly care, can match or excel the figures obtained by the best of the newer orchards. I recall the statements made regarding one of these, where the owner obtained a gross income of \$600 an acre, a wonderful average. It is true he sold his fruit, picked and delivered, at \$2.40 per 100 pounds—an exceptional yield and an exceptional price, even in this very favorable season. But this result would not have been possible but for the fact that for many, many years (in which some very moderate profits were obtained) the place had had expended upon it in fertilizer and care more money than the ordinary grower dares to give.

It seems proper to name some of the items of expense borne by such an orchard, to indicate to those less familiar than ourselves the expenses which have to be met, whether the years be good or bad, to maintain a healthy and fruit-producing orchard.

Such information is not furnished, even if it is possessed by the ordinary correspondent.

Few orchards fully mature, but represent a cost of \$1500 an acre. If a man pays that or more, he will expect he is entitled to at least 6% interest upon that sum.

To maintain an old orchard in the finest and most productive condition, the fertilizer will cost from \$30 to \$40 an acre annually. The cost of water varies, but, taking all the sections to make an average, I think we ought to call the cost \$12. The cost of picking and hauling an average crop will be fully \$15. The cultivation and irrigation will vary from \$25 to \$50—say \$35. If pruning of mature orchards is done annually, the cost would not be over \$10, perhaps less if navels, more if seedlings. Taxes amount to about \$12. Fumigation depends upon conditions, but perhaps \$3 would cover the average orchard. Then there are trees to be replaced, rebudded, and incidentals, costing \$3. I make no effort to be exact, but think these figures would be fair, as covering various conditions. This makes a total of about \$125, besides the interest of \$90, or \$215 of actual cost to permanently maintain a perfect orchard. Ten acres should return, therefore, fully \$2000 to maintain itself in productive shape and allow 6% on its value. Under the present season's favorable conditions, many orchards have done better than this. If they have done twice or three times as well, so much the better for the owner. If he be wise he will not anticipate such profits every year, but maintain the productiveness of his orchard by liberal treatment against the time when Florida's million boxes and California's added millions shall make impossible the prices we received this year.

Though one's own crop may escape frosts, the fact of its presence casts a suspicion upon all and depreciates the value of the fruit. Though our navel orange has proven itself the best keeper and the most popular of any grown with the trade for this reason, and so high flavored as to be sure to command a place against any fruit the world can produce, it is idle to depend upon permanent fancy prices in the face of certainly increased production and the other conditions to which I have referred.

To the natural increase of the orchard area we have no right to object. Even the business of orange growing cannot be made a monopoly, and it must take its chances in the way of competition; but certainly we are justified in pointing out the misuse of figures liable to over-stimulate and thus endanger the

business in which we are engaged for life.

If the costs and risks in orange growing were no more than is sometimes made to appear, we should have no right to ask protection against cheaper grown fruit, nor could we make just demands for more reasonable freight rates.

The Almond Crop.

From the industrious manner in which certain firms of almond buyers for San Francisco are publishing an exaggerated estimate of the coming almond crop in the interior papers, it would seem that an attempt is being made to scare the growers into selling at whatever prices may be offered them.

If the growers would take the trouble to ascertain for themselves the crop conditions and protect their interests by forming local associations, such as has been formed in our own community, there would be no harm done by this "bearing" the market. Almonds have been bought over the State at prices varying from 9 to 11 cents for soft-shells, and the shortness of the crop this year, taken with the fact that the market is particularly bare of last year's stock, leads us to think that better prices than these will be obtained by those who are not in too great a hurry to sell.

It is too bad that the almond growers of the State do not form some sort of a general association, which could do much to give the growers all the market conditions would justify for their products. If all the almond growing localities were as well organized as this one is, it would be but a simple matter to form a central organization.

It will be remembered, apropos of the estimate above mentioned, that the buyers last season estimated the season's output at 300 cars.

Our local association officials, from returns to inquiries made all over the State, estimated the crop at 224 cars and there was in reality but 225 cars produced in the State.

That this season's crop should be "estimated" the same as it was last season is ridiculous. Hold on to your almonds, growers, until you can get fair offers.—Davisville Enterprise.

BUG BANE

TREE WASH!

STEAD'S "BUG BANE" is the best and cheapest wash known for either citrus or deciduous trees. Contains no poisonous chemicals. Is a fertilizer and tree tonic combined. Never clogs your pump or closes up the pores of a tree. **EASY TO HANDLE. Always effective.** In use for more than ten years by leading fruit men, some of whom use upwards of 20 tons per year. Their testimonials together with prices and full directions upon application.

Manufactured only by
G. D. STEAD CO. SAN DIEGO

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PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

Rife Hydraulic Engine

Pumps water without any attention or expense for

IRRIGATION.

Big Increase in Crops
Independent of Rain.
Higher Prices.
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BUSINESS COLLEGE.

24 Post Street, - - - San Francisco.

Has a National reputation for good work. Its Departments of Bookkeeping and Business Practice, Shorthand and Typing, Penmanship, Modern Languages, English Branches, Telegraphy, Civil, Mining and Electrical Engineering, Surveying, Assaying, etc., are practical in every detail, as is attested by the 16,000 graduates who are now successfully applying their knowledge.

Students can enter at any time. Ladies admitted to all Departments. Pupils receive individual instruction. Twenty teachers. Moderate charges.

Write for Catalogue and College Journal.

Gain A Second

—when your horse is fast seconds count on a record.

A little stiffness or soreness in leg or body may lose seconds and hence lose a record. Chills, congestion and inflammation are the enemies of speed.



Tuttle's Elixir

used in dilute form has no superior as a leg and body wash. Apply to the legs and bandage lightly. Apply to the body and blanket. Removes stiffness and soreness, prevents colds, congestion, and produces flexibility and firmness of muscles and tendons.

For sale at all druggists. Sample bottle mailed for 6c to pay postage.

Veterinary Experience—full of valuable information—100 pages, FREE.

Dr. S. A. Tuttle, 33 Beverly St. Boston, Mass.

BEWARE of all so-called Elixirs, none genuine but Tuttle's.

Patrons of Husbandry.

San Jose Grange.

Three candidates were initiated at the meeting of the San Jose Grange June 23 and two applications for membership were received. Worthy Master Coates presided and the meeting is reported by the Mercury.

There was some discussion over the low prices that are now being paid for apricots for canning. There were some suggestions of a combination of growers for protection in this direction, but no definite action was taken.

The following committee was appointed upon revision of the by-laws: E. D. Meder, E. E. Newell and D. H. Bryant.

The resignation of Cyrus Jones as treasurer was received. He has started on an extended Eastern trip and Moore Briggs was elected to fill the vacancy.

The following resolutions regarding the Cured Fruit Association were passed by a unanimous vote:

The San Jose Grange desires to formally express its pleasure at the announcement of success that has attended the initial work of the California Cured Fruit Association, and to assure the directors the same hearty support in the future that has been given in the past. We believe that this is the dawn of a new era in the fruit industry of this State and county; that out of all this seeming confusion of organization and reorganization will slowly but surely emerge in all its grand proportions the co-operative commonwealth, and that amid these improved conditions humanity will live happier and better contented.

That we may cement ourselves into closer unity and make more enduring the association into which we have entered, we do hereby

Resolve, That it is the sense of this Grange that members of the association ought not only to confine their dealings to those packers affiliated with them in the association in the marketing of their prunes, according to the terms of their contract, but as well they should give them the decided preference in the selling of all other fruits. This will serve to make our union stronger and those antagonistic to our movement weaker. In union is strength and the more perfect the union the greater the strength.

After the business meeting a sumptuous harvest feast was enjoyed. The tables were spread in the dining-room and presented an attractive appearance.

Secretary's Quarterly Report.

TO THE EDITOR:—Since my last letter was published in your columns the State Grange has been steadily growing and we feel that our efforts are not all in vain:

During the March quarter four new Granges were organized and one re-organized. The first new Grange was organized at El Verano, Sonoma county; then, in Santa Clara county, Unity Grange, Morgan Hill and Lincoln Granges were organized in rapid succession. San Benito county was then visited and Hollister Grange re-organized. From all reports, these Granges have gone to work with energy and a determination to be a credit

to the Order of Patrons of Husbandry. Grangers are beginning to feel that the Grange is one of the important factors influencing the life of the farmer to-day, and this spirit seems manifest in our new Granges. They are eager to have and do the very best. Throughout the State the importance of the Grange seems to be growing, and our Worthy Master is constantly receiving calls for organizers to be sent to various parts of the State, and I very much hope in my next letter to report more new Granges.

The Granges themselves have not been idle, as the membership of many of them was considerably increased. The following is the list, with the number of members gained during the quarter: San Jose, 22; Live Oak, 14; Grass Valley, 12; Petaluma, 11; American River, 10; Selma, 8; Elk Grove, 7; Glen Ellen, 7; Fair Oaks, 6; Progressive, 5; Sacramento, 5; Santa Rosa, 4; Florin, 2; Los Gatos, 2; Magnolia, 2; Stockton, 2; Temescal, 2; Watsonville, 2; Geyserville, 1.

After the June reports are all in, I am in hopes to be able to report a much greater increase, although I feel very proud of our report for the March quarter. We will each do our best to help our State Grange to grow.

LAUROLA S. WOODHAMS, Sec'y.
Santa Clara.

State Convention of County Mutual Insurance Companies.

TO THE EDITOR:—The State convention of the county mutual fire insurance companies in the State, held in Los Angeles, June 20, was largely attended and a permanent State organization was effected. Delegates were in attendance from counties as far north as Sonoma. The following statistics were secured from a few of the delegates:

Counties.	Losses.	Risks written.
Sonoma.....	None	\$200,000
San Bernardino.....	None	64,000
Ventura.....	None	160,000
Fresno.....	None	110,000
Orange.....	\$83,000	328,000
Los Angeles.....	None	350,000

The following officers were elected for the ensuing year: W. A. Beckel, Santa Ana, president; S. D. Merk, Paso Robles, vice-president; G. F. Cromer, Pomona, secretary; H. Gregory, Santa Rosa, treasurer. SECRETARY.
Los Angeles.

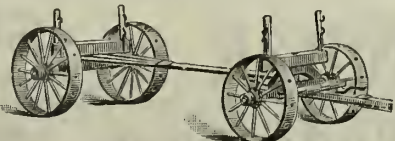
A California Token in an Indiana Grange.

Worthy Master Worthen has received the following interesting note from L. V. Robertson, secretary of the Grange named at South Bend, Indiana:

At the regular meeting of St. Joseph Valley Grange No. 584, June 7th, we were presented with a very handsome gavel made from the redwood of one of California's big trees, accompanied by pictures and a letter descriptive of the tree from which it was made, and we thought that you might be interested and pleased to know that away back here in Indiana the banner Grange of the State is being called to order by a gavel made from one of the big trees of your far away Golden State. The suggestion that you be apprised of the fact emanated from Bro. A. Jones, Worthy Master of the National Grange.

Farm Wagon only \$21.95.

In order to introduce their Low Metal Wheels with Wide Tires, the Empire Manufacturing Company, Quincy, Ill., have placed upon the market a Farmer's Handy Wagon, that is only 25 inches high, fitted with 24 and 30-inch wheels with 4-inch tire, and sold for only \$21.95.



This wagon is made of the best material throughout, and really costs but a trifle more than a set of new wheels, and fully guaranteed for one year. Catalogue giving a full description will be mailed upon application by the Empire Manufacturing Co., Quincy, Ill., who also will furnish metal wheels at low prices made any size and width of tire to fit any axle.



We are the largest manufacturers of Steel Wheels and Truck Wagons in the World. Write for Catalogue. Havana (Ill.) Metal Wheel Co.

"ALPHA-DISC" CREAM SEPARATORS



The improved "Alpha" disc or divided milk-strata system is used in the De Laval separators only. Strong patents prevent its use in any other machines. The "disc" system makes the De Laval machines as superior to other separators as such other separators are to setting systems. It reduces necessary speed one-half, reduces size of revolving bowl, saves labor and power, enables simplicity and durability, skimming cold milk, running cream of any desired thickness, and insures absolute thoroughness of separation under practical use conditions, which is not possible with any other separator or creaming system.

Send for "20th Century" catalogue.

THE DE LAVAL SEPARATOR CO.

RANDOLPH & CANAL STS.,
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General Offices:

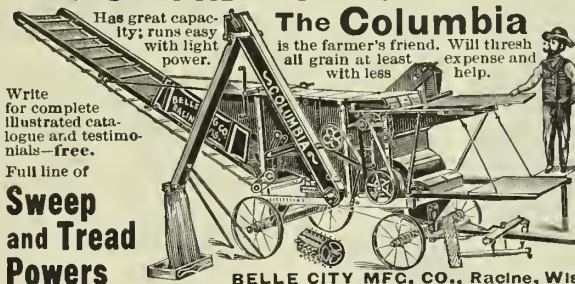
74 CORTLANDT STREET,
NEW YORK.

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327 COMMISSIONERS ST.,
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A SMALL THRESHER



Has great capacity; runs easy with light power.
Write for complete illustrated catalogue and testimonials—free.
Full line of Sweep and Tread Powers

The Columbia is the farmer's friend. Will thresh all grain at least with less expense and help.

BELLE CITY Feed and Ensilage Cutters

All sizes, both hand and power. Illustrated catalogue and latest book about Ensilage mailed free.

BELLE CITY MFC. CO., Racine, Wis. Box 114.

IRRIGATION MACHINERY.

KROGH CENTRIFUGAL PUMPS

—THE BEST FOR—

Drainage, Irrigation and Reclamation.

Capacity up to 100,000 gallons per minute.

IN USE ALL OVER THE PACIFIC STATES.

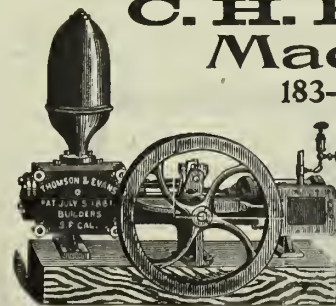
KROGH MANUFACTURING CO.,

BRANCH, 134-136 MAIN ST.

9-16 STEVENSON ST., SAN FRANCISCO, CAL.

C. H. EVANS & CO., Machine Works,

183-185-187 FREMONT STREET,



Where, with Enlarged and Increased Facilities, they are better than ever prepared to do

First-Class Machine Work

Promptly, and at Reasonable Prices, and will continue the manufacture of

Thomson & Evans Steam Pumps,

Deep Well Pumps, Power Pumps, Etc.,

Also Marine Engines, Ship and Steamboat Work, Pipe Cutting, General Jobbing and Repairing.

FRANCIS SMITH & CO.,

—MANUFACTURERS OF—

SHEET IRON & STEEL PIPE

FOR TOWN WATER WORKS.

Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., all sizes.

46 FREMONT STREET, - - - - SAN FRANCISCO, CAL.

Iron cut, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making Pipe. Estimates given when required. Aro prepared for coating all sizes of Pipes with Asphaltum.

ASPHALT PAPER PIPE.

IMPERISHABLE.

For Water Works, Mining and Irrigation Plants, Drains, Electrical Conduits. No Corrosion—Electrolysis Proof. Will Not Rust—Alkali Proof. Cheaper Than Iron.

MCCARTHY & MACKAY,

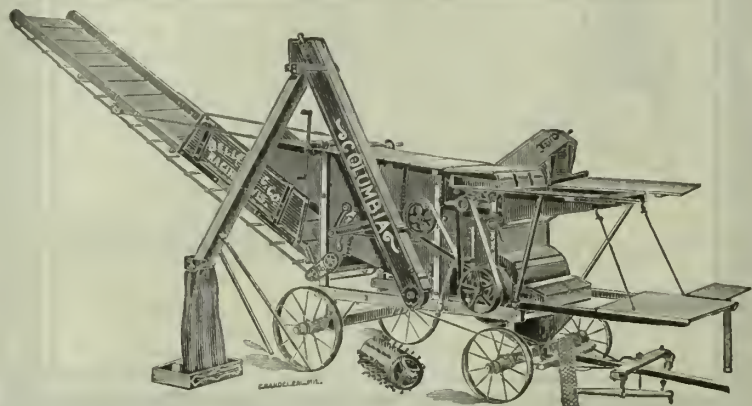
226 MARKET STREET, SAN FRANCISCO, CAL.

Fruit Canning Process.

There is no more interesting sight than to watch the whole process of the canning room, states the Fresno Republican. The fruit is brought in from the orchards in forty-pound boxes and graded by machine into four sizes; then taken to the girls who halve and pit it; then to women who sort out the pieces that are in bad condition and must be spread on trays for sun drying. The remainder, after washing, is placed with deft fingers into quart or larger cans, each can being weighed to insure good measure. The cases of cans are then carried to the place where they are filled with hot syrup by one turn of a twelve-mouthed faucet, capped,

sealed by machinery, and in broad shallow iron baskets, containing 200 or more cans, dipped in great baths of boiling water which cooks the fruit in a few minutes. The cans are then put away to cool, after which they are tested to see if they have been perfectly sealed; then labeled and stored for shipping.

The smallest book in the world is not much larger than a man's thumb nail. It was made in Italy. It is $\frac{1}{10}$ inch long and about $\frac{1}{4}$ inch wide. It contains 208 pages, each having nine lines and from 95 to 100 letters. The text is a letter—before unpublished—written by the famous inventor of the pendulum clock to Madame Christine of Lorraine in 1615.



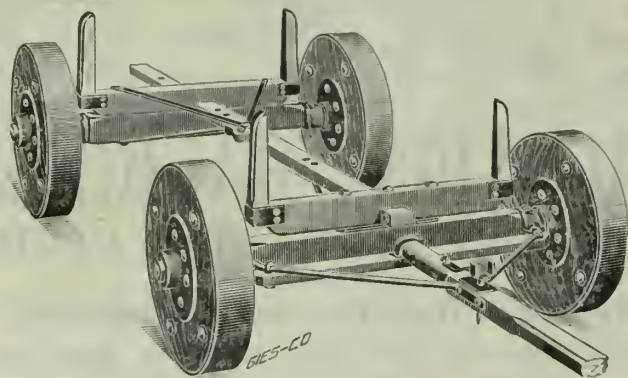
A Small Threshing Outfit.

Having to depend on the threshers is one disadvantage of grain growing. Those who have a Columbia thresher may have their grain threshed whenever it is most convenient and save much expense at the same time. The Columbia requires 6 to 8 H. P., and does as good work as larger threshers.

It requires less help to operate it, and saves much grain. It can be drawn any-

where that a wagon can go, which is a distinct advantage over heavy machines. It can be operated by any kind of power—sweep, tread or steam. Two sizes are made, with 24 and 32-inch cylinders; one size weighs 2000 pounds, the other 2300 pounds. Both machines are complete with all attachments.

Every grain grower is interested in this small thresher. An illustrated catalogue will be mailed by the manufacturers, the Belle City Manufacturing Co., Racine, Wis., to any one who writes for it.



"CALIFORNIA SPECIAL" FRUIT AND FARM TRUCK.

Steel Wheels, 28 and 30 Inches, 4-in. Tire. Wood Wheels, 28 and 30 Inches, 6-in. Tire.

Guaranteed for Five Years. LOW in Price.

Write or Call. ALLISON, NEFF & CO., 222 Mission St., San Francisco.

The only roofing without a fault

P & B

Ready Roofing

Paraffine Paint Co
116 Battery Street—San Francisco

The best builders in America use P & B Ready Roofing. Shingles may warp, slate may chip, tin may sweat, tar may run, or iron expand, but P & B will stand any climatic condition—the weather of the west requires it. Demand it of your dealer.

\$50.00 RANGE FOR \$25.00
TO INTRODUCE OUR

TRIUMPH STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21 1/4 inches deep, and 15-gallon reservoir. Weight 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. W. M. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo. Will ship C. O. D. with privilege of examination.



Easy Harness

All harness, old or new, is made pliable and easy—will look better and wear longer—by the use of

Eureka Harness Oil

The finest preservative for leather ever discovered. Saves many times its cost by improved appearance and in the cost of repairs. Sold everywhere in cans—all sizes.
Made by STANDARD OIL CO.

THE MONARCH AND JUNIOR MONARCH HAY PRESSES

Bale Hay at Less Cost Per Ton, and Bale More Per Day, Than Any Other on the Market.



MADE IN THREE SIZES, AS FOLLOWS:

Monarch Press (Compress or Small Bale) - 17x20x40 Inches.
Junior Monarch (3/4 or Medium Size Bale) - 20x22x44 "
Junior Monarch (Standard or Full Size Bale) 22x24x47 "

L. C. MOREHOUSE, San Leandro, Cal.

WM. H. GRAY, General Agent.



NATIONAL HAY PRESS.

WITH LIFTING JACK.

The National Hay Press is an ALL METAL Press. Size of bale 17x22 inches, and any length desired. The Power is constructed to give a complete circle of the horses, with two strokes of the pitman to each circle.

The Head Block is a heavy solid casting carried on trucks, with a long projecting shoe, so that under extreme pressure there can be no tipping back and breaking the pitman.

The Stroke is 33 inches, much longer than others, for the reason that the travel of the pitman is almost direct, while all others travel in a circle.

Feed Opening is 31 inches, which is from 3 to 6 inches longer than all others now on the market. The feed opening and stroke comprise the earning capacity of the press. The large opening and the long stroke in the NATIONAL is a guarantee of two or three tons per day more for the National than any other press in the market.

CROSSHEAD BALE TIES.

We are headquarters on Wire Bale Ties, manufactured of proper length for any size bale.

SISAL BALE ROPE.

We can supply best quality Bale Rope at lowest prices.

PLATFORM SCALES.

We carry stock of Platform Scales, capacity 600 lbs. to 1200 lbs.

HOOKER & CO.,

16 AND 18 DRUMM STREET, - SAN FRANCISCO, CAL.

Nitrate of Soda as a Fertilizer.

SUGAR BEETS.

The largest yield per acre of the best and smoothest form, and very rich in sugar, are grown by using

NITRATE OF SODA

as a fertilizer. Apply just when the beets are getting well started in the row. The results will surprise you.

—FOR SALE BY—

BALFOUR, GUTHRIE & CO.,
316 California Street, - - - San Francisco, Cal.

Write to them for pamphlets.

Dewey, Strong & Co., Patent Agents.

330 Market St., San Francisco, Cal.

Killing Fleas in Outbuildings.

To THE EDITOR:—Noticing a communication in the PACIFIC RURAL PRESS of June 23d, in regard to "Killing Fleas in Outhouses," I wish to say that a couple of years ago I had a case similar to the one spoken of. A party living in the neighborhood of Twenty-first and Folsom streets, had an outhouse where he kept a large number of dogs. The barn and yard became literally alive with fleas, and after that tenant left the landlord found it impossible to rent the premises on account of the fleas. My business being that of machine whitewashing and tree spraying, he sent for me to give the place a thorough whitewashing, including the yard. I did so, beginning with the yards first. The wet lime spray saturated the ground and killed the fleas, as well as all the eggs and larvæ. The result was that the fleas were exterminated.

By referring to my advertisement in the PACIFIC RURAL PRESS in regard to whitewashing and tree spraying apparatus, your readers will find an easy way out of their trouble if similarly afflicted.

WM. WAINWRIGHT,
1411 Jackson street, San Francisco.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr. old classes, except 1st on 2-yr. old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 626 Market St., S. F.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAXE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs. Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A.J.C.C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale

POULTRY.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SANTA TERESA POULTRY FARM, Eden Vale. Santa Clara Co., Cal. Illustrated catalogue and guide free. Agents Eclipse Aluminum Leg Bands and Rabbit Labels.

WILLIAM NILES & CO., Los Angeles, Cal. Poultry, Belgian Hares. Imported pedigreed stock.

MANHATTAN POULTRY & STOCK FOOD is best. All grocers. Depot, 1253 Folsom St., S. F.

SWINE.

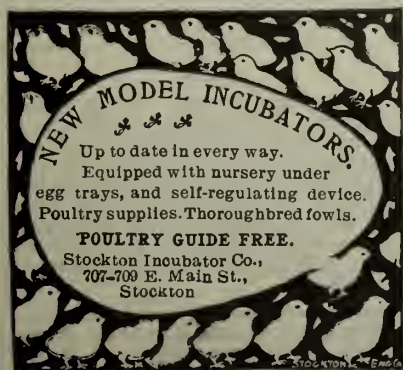
P. H. MURPHY, Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

BERKSHIRE, POLAND-CHINA & DUROC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

J. P. ASHLEY, Linden, San Joaquin Co., Cal. Breeds Berkshire, Poland-China and Essex Hogs

BREEDERS' SUPPLIES.

HENTEETH, Blood Meal, Bone, Chick Feed; circular free, or 4 samples, prices, etc., mailed for 5c postage. Poultry, Pigeon and Belgian Hare Supplies, Incubators, etc. Croley, 506 Sac'to St., S. F.



ELGIN Watches keep accurate time. Sold by jewelers in cases to suit. Prices reasonable.

Oakland Poultry Yards

and PACIFIC INCUBATOR COMPANY,

Established 1876.

1317 Castro St., Oakland, Cal.

IMPORTERS AND
BREEDERS of all the
leading strains of
fowls.



Also Proprietors of the
PACIFIC RABBITRY,
containing some of the
finest BELGIAN
HARES in the State.

COMPLETE STOCK OF POULTRY SUPPLIES AND SUNDRIES ALWAYS ON HAND.
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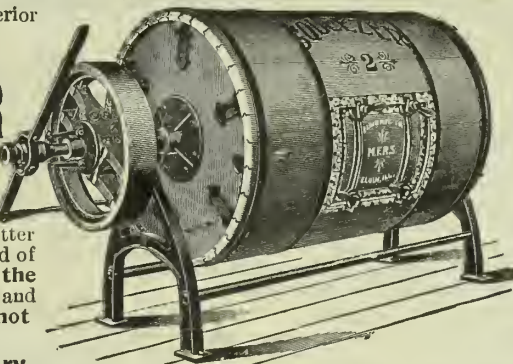
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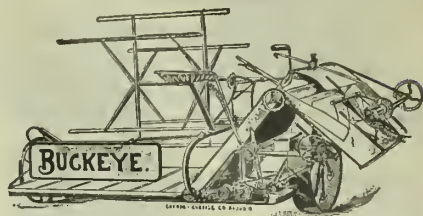
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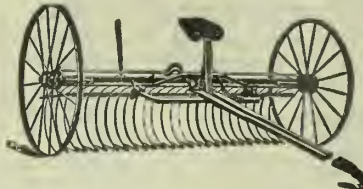
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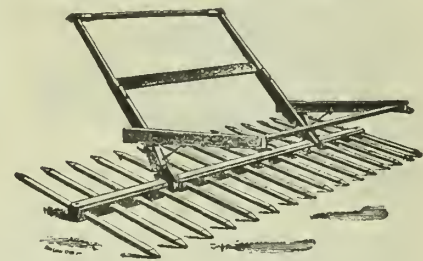
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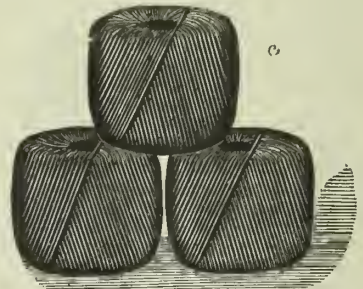
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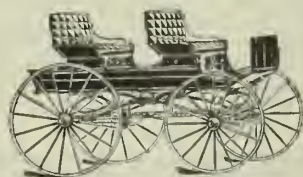
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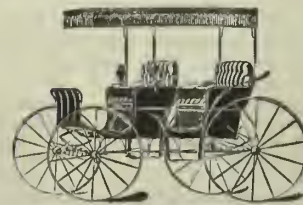
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SAN FRANCISCO.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, June 27, 1900.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being per bushel:

	June.	July.
Wednesday.....	80 1/2 @ —	78 1/2 @ 81 1/2
Thursday.....	81 1/2 @ —	81 1/2 @ 82
Friday.....	82 1/2 @ —	82 1/2 @ 83 1/2
Saturday.....	87 @ —	85 1/2 @ 88
Monday.....	85 @ —	88 @ 83 1/2
Tuesday.....	81 @ —	85 1/2 @ 82

LIVERPOOL FUTURES.

Prices of futures on No. 2 Red Winter per cental in Liverpool were as follows for the week:

	July.	Sept.
Wednesday.....	6s 2 1/4 d	6s 2 1/4 d
Thursday.....	6s 6 d	6s 7 1/2 d
Friday.....	6s 5 1/4 d	6s 7 d
Saturday.....	6s 8 1/4 d	6s 9 1/4 d
Monday.....	6s 8 1/4 d	6s 10 1/4 d
Tuesday.....	6s 5 1/4 d	6s 7 d

SAN FRANCISCO FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec. 1900.	May, 1901.
Thursday.....	1 16 1/2 @ 1 14 1/2	— @ —
Friday.....	1 16 @ 1 18 1/2	— @ —
Saturday.....	1 24 @ 1 22	— @ —
Monday.....	1 16 1/2 @ 1 21 1/2	— @ —
Tuesday.....	1 17 1/2 @ 1 14	— @ —
Wednesday.....	1 17 1/2 @ 1 16 1/2	— @ —

WHEAT.

To say that the wheat market has been unsettled, higher and decidedly unfavorable to buyers the greater part of the past week, is expressing it mildly. It was a grievous time for the shorts, making their couch one of thorns, but little was the pity they received or were entitled to, as they prosper only through hammering down prices, and have no hesitancy in wrecking not only those who are against them on the speculative boards, but also the producers, whenever the opportunity presents. The excitement was in decided contrast to the recent dull and depressed condition of the market, especially when there was a jump of 8c. per cental, or \$160 per 100-ton contract, between the opening price of one day and the opening figure of the day following, as was the case on Saturday last, December wheat touching \$1.24. There will be almost a total failure of the wheat crop in a very large portion of the Dakotas, Minnesota and Manitoba, owing to excessively dry and hot weather in those sections. It is estimated that in the Dakotas and Minnesota the yield will not aggregate 60,000,000 bushels. Many predict dollar wheat in Chicago, equivalent to \$1.65 per cental, but much will depend on how the crops turn out in Europe and other portions of the world. But in any event there is little or no probability of wheat again this season touching the extreme low figures of the past few months. The world's shipments of wheat for the week were 8,268,000 bushels, an increase of 550,000 bushels, principally from Russia. Tuesday there was quite a break in options, but to-day (Wednesday) a considerable portion of yesterday's loss was recovered. Spot market closed inactive but against buyers.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1900, delivery, \$1.14@1.24.
May, 1901, delivery, \$—@—c.
Wednesday, at regular noon session of Call Board, December, 1900, wheat sold at \$1.17 1/2 @ 1.16 1/2 May, 1901, —@—.

California Milling..... \$1 10 @ 1 15
Cal. No. 1 shipping, alongside..... 1 02 1/2 @ 1 07 1/2
Oregon Valley..... 1 02 1/2 @ 1 07 1/2
Washington Blue Stem..... 1 07 1/2 @ 1 12 1/2
Washington Club..... 1 02 1/2 @ 1 07 1/2
Off qualities wheat..... 97 1/2 @ 1 03 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1899-99.	1899-1900.
Liv. quotations.....	s-d @ s-d	6s9d @ 6s9 1/2 d
Freight rates.....	30 @ 32 1/2 s	40 @ — s
Local market.....	\$1 07 1/2 @ 1 10	\$1 05 @ 1 10

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

FLOUR.

Market is firmer, owing to recent advances in price of wheat. But most of the late business in flour has been at the old figures. Higher prices are now being generally asked, however, with trade slow at the advance. The flour market is almost invariably inactive immediately after advanced rates have been established.

Superfine, lower grades.....	25 @ 25 50
Superfine, good to choice.....	26 @ 26 80
Country grades, extras.....	31 @ 31 40
Choice and extra choice.....	34 @ 34 85
Fancy brands, jobbing.....	36 @ 36 75
Oregon, Bakers' extra.....	29 @ 29 25
Washington, Bakers' extra.....	29 @ 29 40

BARLEY.

Prices for this cereal have been tending more in favor of the producing and selling interests the current week than for a long time past. The strength developed was largely due to the improved condition of the wheat market, and firmness was more pronounced in speculative dealings or on Call Board than in the open or sample market. Buyers of actual barley for immediate delivery found it necessary, however, to pay materially better prices than have been lately ruling.

Feed, No. 1 to choice.....	70 @ 72 1/2
Feed, fair to good.....	65 @ 67 1/2
Brewing, No. 1 to choice.....	80 @ 85
Chevalier, No. 1 to choice.....	— @ —
Chevalier, No. 2.....	— @ —

OATS.

The market is showing more firmness, owing to the improvement in values for wheat and barley, but quotable prices for oats have not changed materially, having been previously on a comparatively high plane as compared with other cereals. Choice oats continue scarce. Common grades are in most liberal supply and incline the least in favor of sellers.

White Oats, fancy feed.....	1 23 1/2 @ 1 25
White, good to choice.....	1 12 1/2 @ 1 20
White, poor to fair.....	1 05 @ 1 10
Gray, common to choice.....	1 02 1/2 @ 1 12 1/2
Milling.....	1 15 @ 1 25
Surprise, good to choice.....	1 20 @ 1 30
Black Russian.....	95 @ 1 07 1/2
Red.....	95 @ 1 17 1/2

CORN.

There has been a firm tone to the market the past week, owing to conditions East, a large proportion of local offerings being imported product. Of the California corn on market, there is more Large White than of any other variety. Millers have been lately using White for mixing, and on this account better prices are being realized than had been current.

Large White, good to choice.....	1 12 1/2 @ 1 15
Large Yellow.....	1 15 @ 1 17 1/2
Small Yellow.....	1 40 @ 1 50
Eastern, in bulk (carload lots).....	1 09 @ 1 11

RYE.

Values are being maintained higher than last noted. There is no particularly active inquiry, neither is there any special selling pressure.

Good to choice, new.....	95 @ 97 1/2
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BUCKWHEAT.

Market is bare of offerings and values are wholly nominal.

Good to choice.....	2 00 @ 2 10
Silverskin.....	— @ —

BEANS.

With the opening of the new season not very far distant, and stocks of last crop now on hand of rather small magnitude, it is natural that there should not be much doing at present. There is a fair jobbing trade, and while the market is not noteworthy for firmness, values are being tolerably well maintained, the quotable range remaining practically as last stated.

Pea, fair to good, 100 lbs.....	3 35 @ 3 50
Small White, good to choice.....	3 30 @ 3 40
Lady Washington.....	2 90 @ 3 05
Butter, small.....	— @ —
Butter, large.....	— @ —
Pinks.....	2 70 @ 2 90
Bayos, good to choice.....	2 85 @ 3 00
Reds.....	3 25 @ 3 75
Red Kidneys.....	— @ —
Limas, good to choice.....	5 25 @ 5 35
Black-eye Beans.....	3 25 @ 3 75
Horse Beans.....	— @ —
Garbanzos, large.....	2 50 @ 2 75
Garbanzos, small.....	2 00 @ 2 25

DRIED PEAS.

Virtually nothing doing in this line at present. There are none offering from first hands. In quotable rates there is no change to note.

Green Peas, California.....	2 20 @ 2 35
Niles Peas.....	2 00 @ 2 25

WOOL.

The same inactivity previously reported is still being experienced in the wool market. Eastern manufacturers claim that orders for goods are coming in too slowly to warrant them in taking hold of the raw material, unless in a speculative way at lower figures than have been lately asked. The season is peculiar in more respects than one. Although still in the first half of the year, with the spring season not yet opened, so far as extensive buying is concerned, Fall lambs' wool has begun to arrive, and some of the same, rather heavy and ordinary, has been placed at 10c.

SPRING.

Humboldt and Mendocino.....	18 @ 20
Northern, free.....	15 @ 17
Northern, defective.....	12 @ 14
Middle Counties, free.....	15 @ 17
Middle Counties, defective.....	12 @ 14
Southern Mountain, 12 mos.....	10 @ 12
Southern Mountain, free, 7 mos.....	11 @ 13
Southern Mountain, defective, 7 mos.....	10 @ 12
Oregon Valley, fine.....	19 @ 21
Oregon Valley, coarse to medium.....	18 @ 19
Eastern Oregon, choice.....	16 @ 17
Eastern Oregon, fair to good.....	12 @ 15
Nevada, as to condition.....	15 @ 17

HOPS.

Business in this line is light and is likely to so continue during balance of the season. Supplies remaining unplaced are mostly very ordinary quality, for which there is little or no demand at present. For choice new to arrive on contracts, the market is quotable at 9@10c., but only favorite marks are sought after.

Good to choice, 1899 crop.....	7 @ 10
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HAY AND STRAW.

The slightly improved condition of the hay market developed during preceding week brought forth increased offerings, and as there was no corresponding increase in the demand, the market has not inclined especially in sellers' favor since last review. Quotations are without special change. Choice new hay still bids fair to bring comparatively good prices later on. Straw market was dull and weak.

NEW HAY.	
Wheat.....	7 00 @ 8 50
Oat, fair to good.....	5 00 @ 6 50
OLD HAY.	
Wheat.....	6 50 @ 10 00
Wheat and Oat.....	6 00 @ 9 00
Oat.....	6 00 @ 8 00
Barley.....	5 00 @ 7 00
Alfalfa.....	5 00 @ 7 00
Stock.....	5 00 @ 6 00
Compressed.....	6 50 @ 9 50
Straw, 3/4 bale.....	25 @ 37 1/2

MILLSTUFFS.

Market was amply stocked with Bran and Middlings, quotable prices continuing without material change. Rolled Barley tended against buyers. Milled Corn was rather firmly held.

Bran, 3/4 ton.....	12 50 @ 13 00
Middlings.....	15 00 @ 18 00
Shorts Oregon.....	13 00 @ 15 00
Barley, Rolled.....	16 00 @ 16 50
Cornmeal.....	24 50 @ 25 00
Cracked Corn.....	25 00 @ 26 00

SEEDS.

There is no new or specially noteworthy feature to record. There are no large stocks or offerings at present of seed of any description. Quotations given are based mainly on jobbing rates and are without appreciable change.

	Per ctl.
Mustard, Trieste.....	— @ —
Mustard, Yellow.....	— @ —
Flax.....	— @ —
	Per lb.
Canary.....	3 1/2 @ 4
Rapo.....	2 @ 3
Hemp.....	4 @ 4 1/2
Timothy.....	4 @ 4 1/2
Alfalfa, Utah.....	— @ —

BAGS AND BAGGING.

Grain Bag market shows steadiness, demand being reported good at current rates. Fruit Sacks are offering at unchanged figures. In prices of Wool and Bean Bags there are no changes to report.

Calcutta Grain Bags, huyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 1/2 @ 6 3/4
San Francisco Grain Bags, 22x36, spot.....	6 1/2 @ 6 3/4
State Prison Bags in lots of 2000, 3/4 100.....	5 65 @ —
Wool Sacks, 4 lbs.....	— @ 23 1/2
Wool Sacks, 3 1/2 lbs.....	— @ 23 1/2
Fleece Twine.....	7 1/2 @ —
Gunnies.....	— @ 12 1/2
Bean Bags.....	4 1/2 @ 5 1/2
Fruit Sacks, cotton.....	6 1/2 @ 7 1/2

HIDES, PELTS AND TALLOW.

There is no change for the better observable in this market, either in general tone or in quotable rates, and no improvement anticipated in the near future. Trade is dull in Eastern centers, with values on the down grade.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	9 1/2	8 1/2
Medium Steers, 48 to 56 lbs.....	8 1/2	7 1/2
Light Steers, under 48 lbs.....	8 1/2	7 1/2
Heavy Cow Hides, over 50 lbs.....	8 1/2	7 1/2
Light Cow Hides, under 50 lbs.....	8 1/2	7 1/2
Wet Salted Kip.....	9	8
Wet Salted Veal.....	9	8
Wet Salted Calf.....	10	9
Dry Hides.....	17	14
Dry Kip and Veal, 11 to 16 lbs.....	18	12
Dry Calf, under 4 lbs.....	18	15
Salted Horse Hides, large.....	2 00 @ —	—
Salted Horse Hides, medium.....	1 50 @ —	—
Salted Horse Hides, small.....	1 00 @ —	—
Dry Horse Hides, large.....	1 75 @ —	—
Dry Horse Hides, small.....	75 @ 1 00	—
Dry Colts' Hides.....	50 @ 75	—
Pelts, long wool, 3/4 skin.....	1 00 @ 1 25	—
Pelts, medium, 3/4 skin.....	70 @ 90	—
Pelts, short wool, 3/4 skin.....	35 @ 60	—
Pelts, shearing, 3/4 skin.....	20 @ 35	—
Deer Skins, best summer.....	27 1/2 @ 30	—
Deer Skins, good medium.....	20 @ 22 1/2	—
Deer Skins, thin winter.....	— @ 10	—
Elk Hides.....	10 @ 12	—
Tallow, good quality.....	4 1/2 @ 4 1/2	—
Tallow, No. 2.....	3 1/2 @ 4	—
Goat Skins, perfect.....	30 @ 37 1/2	—
Goat Skins, damaged.....	10 @ 20	—
Kid Skins.....	5 @ 10	—

HONEY.

Although there are no large quantities offering, the demand at full current rates is mostly on local account and is not what

could not be termed brisk. To effect anything like wholesale transfers, current quotations would have to be materially shaded in favor of buyers. Present spot supplies are composed largely of Amber Extracted.

Extracted, White Liquid.....	6 1/2 @ 7
Extracted, Light Amber.....	5 1/2 @ 6 1/2
Extracted, Amber.....	5 1/2 @ 5 1/2
White Comb, 1 lb frames.....	12 @ 12 1/2
Amber Comb.....	8 @ 10

BEESWAX.

There are no large quantities offering, either of spot stock or for future delivery. Market is firm at the quotations.

Good to choice, light, 3/4 lb.....	26 @ 27
Dark.....	24 @ 25

LIVE STOCK AND MEATS.

Beef was in fair supply, with demand only moderate, and a narrow range in quotable values. Mutton sold at generally unchanged rates, offerings proving equal to immediate needs. Lamb was in moderate supply, with market steady. Veal was in light receipt and sold as a rule at full current figures. Values for Hogs were as a rule well sustained, arrivals being of rather light volume and a considerable proportion Eastern product.

Beef, first quality, dressed, net 3/4 lb.....	5 1/2 @ 6
Beef, second quality.....	5 1/2 @ 6
Beef, third quality.....	5 @ 5 1/2
Mutton—ewes, 6 1/2 @ 7c; wethers.....	7 @ 7 1/2
Hogs, hard grain fed, medium.....	5 1/2 @ 6
Hogs, small, fat.....	5 1/2 @ 6
Hogs, large, hard.....	5 1/2 @ —
Hogs, acorn-fed.....	— @ —
Hogs, feeders.....	5 1/2 @ 5 1/2
Hogs, country dressed.....	6 @ 6 1/2
Veal, small, 3/4 lb.....	8 @ 10
Veal, large, 3/4 lb.....	7 @ 8 1/2
Lamb, spring, 3/4 lb.....	8 @ 8 1/2

POULTRY.

Two conditions operated against a firm or satisfactory market for poultry. Offerings of domestic included little which could be termed choice, being mainly small young or poor old. In the second place, the demand was of a mid-Summer character and far from brisk. The most positive and exacting inquiry was for large and fat fowls, which demand was supplied mostly by Eastern. Three carloads of Eastern poultry were landed here the current week. Extra large and fat California chickens, especially Young Roosters showing no spurs, brought an advance on quotations.

Turkeys, dressed, 3/4 lb.....	— @ —
Turkeys, live hens, 3/4 lb.....	11 @ 12
Turkeys, live gobblers, 3/4 lb.....	9 @ 10
Hens, California, 3/4 dozen.....	4 00 @ 5 00
Roosters, old.....	3 50 @ 4 00
Roosters, young (full-grown).....	4 50 @ 5 50
Fryers.....	3 50 @ 4 00
Broilers, large.....	3 00 @ 3 50
Broilers, small.....	1 75 @ 2 25
Ducks, old, 3/4 dozen.....	3 50 @ 4 00
Ducks, young, 3/4 dozen.....	3 50 @ 4 50
Geese, 3/4 pair.....	1 00 @ 1 25
Goslings, 3/4 pair.....	1 00 @ 1 25
Pigeons, old, 3/4 dozen.....	1 25 @ 1 50
Pigeons, young.....	1 25 @ 1 50

BUTTER.

Most of the butter now being produced is showing the effects of warm weather and dry feed. For this sort the market is weak, offerings being much heavier than can be readily placed. Strictly select is scarce and commands an advance on quotations.

Creamery, extras, 3/4 lb.....	19 @ —
Creamery, firsts.....	18 1/2 @ —
Creamery, seconds.....	18 @ —
Dairy, select.....	18 @ —
Dairy, seconds.....	17 @ 17 1/2
Dairy, soft and weedy.....	— @ —
Mixed store.....	14 @ 15
Creamery in tubs.....	19 @ 21
Pickled Roll.....	18 @ 30
Firkin, California, choice to select.....	19 @ 21
Firkin, common to fair.....	17 @ 18

CHEESE.

Market is ruling steady at values which have been current for a fortnight or more. Stocks of flats are of fair volume and slightly on the increase. Supplies of Young Americas and all small cheese continue light.

California, fancy flat, new.....	9 1/2 @ —
California, good to choice.....	8 1/2 @ 9
California, fair to good.....	8 @ 8 1/2
California Cheddar.....	— @ —
California, "Young Americas".....	9 1/2 @ 10 1/2

EGGS.

Very few eggs are now coming forward in first-class condition, and with the demand naturally light at this time of year, the market for the average run of offerings inclined decidedly against sellers, with trade slow. Strictly select, large white, clean and uniformly fresh, sold above quotable rates, going at 19@20c and occasionally a little higher in a small way to special custom.

California, select, large, white and fresh.....	18 @ —
California, select, irregular color & size.....	16 @ 17
California, good to choice store.....	13 1/2 @ 14 1/2
Eastern, as to section and grading.....	14 @ 17
Eastern, cold storage.....	— @ —

VEGETABLES.

Onion market was firmer for both Yel-

low and Red, owing mainly to decreased arrivals. The inquiry was principally for Yellow. Most vegetables in season were in fairly liberal receipt, and it was the exception where the market did not favor the consumer. String beans were lower for common, but firm for choice. Cucumbers, Summer Squash and Peppers were all in increased supply and lower.

Asparagus, # box.....	75	@ 1 50
Beans, String, # lb.....	34	@ 1
Beans, Wax, # lb.....	34	@ 1
Cabbage, choice garden, # 100.....	50	@ 1
Cauliflower, # dozen.....	50	@ 1
Cucumbers, Bay, # box.....	65	@ 90
Egg Plant, # lb.....	5	@ 7
Garlic, # lb.....	24	@ 3 1/2
Green Corn, # sack.....	1 00	@ 1 50
Green Corn, Alameda, # crate.....	1 50	@ 2 00
Onions, Red, Cal., good to choice.....	60	@ 75
Onions, Yellow Danver, # cental.....	1 00	@ 1 10
Peas, Sweet, garden, # lb.....	2	@ 2 1/2
Peas, Green, # lb.....	1 00	@ 1 50
Peppers, Green Chile, # lb.....	8	@ 10
Peppers, Bell, # lb.....	—	@ —
Rhubarb, # box.....	25	@ 50
Squash, Summer, # large box.....	50	@ 75
Tomatoes, # small box.....	50	@ 1 00
Tomatoes, River, # large box.....	1 75	@ 2 00

POTATOES.

A very quiet market has been experienced most of the week, and for other than very best qualities the tendency was in favor of the buying interest. For some fancy new, every potato of medium and uniform size, \$1@1.05 was realized, while fairly good of irregular size were offered down to 40c. The demand for old was light and mainly for seed.

Burbanks, River, # cental.....	40	@ 80
Burbanks, Bay counties, # cental.....	50	@ 85
Burbanks, Humboldt.....	—	@ —
Burbanks, Oregon.....	60	@ 90
River Reds.....	—	@ —
Early Rose.....	—	@ —
Garnet Chile.....	—	@ —
New Potatoes, # cental.....	40	@ 1 00
Sweet, River, # cental.....	—	@ —
Sweet, Merced.....	—	@ —

The Fruit Market.

FRESH FRUITS.

There were tolerably large receipts of fresh fruit of most of the different varieties now in season, but the aggregate was not above the average for this time of year, and the proportion of choice to select stock was not heavy. Apricots of choice quality went to canners at \$20 per ton, some fancy a little higher, while some small, poor and scaly were offered down to \$12.50 without finding custom. Peaches of the ordinary early varieties, and mostly from Sacramento river section, were plentiful and cheap. Plums arrived freely, and unless of desirable size and superior quality, met with a poor market. Figs were lower, and off qualities were hard to place at any price. Grapes arrived sparingly, but only in a small way could they be placed at full rates quoted. Cherries were in reduced supply, the season being nearly ended. Berries of nearly every description of cultivated kinds now arriving sold at generally low prices, Gooseberries proving about the only exception, with very few of latter offering. In the way of new fruit, Whortleberries were on market from Sonoma county, Nutmeg Melons from Arizona and Winters, and Watermelons from Yuma.

Apples, fancy, 4-tier box.....	—	@ —
Apples, good to choice, # 50-lb box.....	50	@ 1 00
Apples, common to fair, # 50-lb box.....	30	@ 40
Apricots, Royal, # crate.....	40	@ 65
Apricots, Royal, # box.....	30	@ 50
Cherries, Royal Anne, # box.....	50	@ 75
Cherries, Black Tartarian, # box.....	35	@ 50
Cherries, White and Red, # box.....	25	@ 50
Cherries, in bulk, # lb, Royal Anne, 4@6c; Black Tartarian, 3 1/2@5c.....	—	@ —
Gooseberries, common, # lb.....	—	@ —
Gooseberries, English, # lb.....	—	@ —
Grapes, Thompson's Seedless, # crate.....	1 40	@ 1 50
Raspberries, # chest.....	3 00	@ 5 00
Blackberries, # chest.....	2 00	@ 4 00
Logan Berries, # chest.....	3 00	@ 5 00
Plums, ordinary varieties, # box.....	30	@ 50
Tragedy Prunes, # crate.....	40	@ 65
Currents, Red, # chest.....	1 50	@ 4 00
Peaches, # box.....	25	@ 40
Peaches, wrapped, # box.....	50	@ 75
Pears, Bartlett, # box.....	1 35	@ 1 60
Pears, common kinds, # box.....	25	@ 75
Figs, Black, # double layers.....	40	@ 65
Figs, single layer box.....	25	@ 40
Strawberries, Longworth, # chest.....	2 50	@ 5 00
Strawberries, Large, # chest.....	2 00	@ 4 00

DRIED FRUITS.

In all essential respects the market for cured and evaporated fruits shows much the same condition as a week ago. There is a moderate movement eastward in Apricots, mainly from Vacaville and Winters, at 6 1/2c for prime in sacks, f. o. b. in carload lots. Beyond this, and a little local trading in Apricots at about 7c for prime Vacaville stock, there is very little doing in transfers from jobbers, and nothing in a wholesale way. In futures there are no signs of any business, either in Apricots, Peaches or Prunes. Neither Eastern nor European dealers show any disposition at present to do any speculative buying for forward deliveries, and if they were so inclined, the chances are the

figures they would name would be too low to prove acceptable by growers and dryers, and would not admit of any business being transacted. Local handlers expect the market for Peaches to open at about 5 1/2c for prime unpeeled in sacks f. o. b. at common shipping points. Aug.-Sept. delivery. Prunes are in limited stock and locally in a small way are commanding about 1 1/2c advance over recent rates, but buyers East refuse to operate at the higher price. Wholesale quotations are continued as last noted. Apples (sliced and evaporated) and Peaches of last crop are still offering in considerable quantity, and are meeting with a weak and discouraging market. In the absence of buyers, it is deemed useless to attempt to crowd sales, as it would likely only result in further cutting of rates without effecting any noteworthy transfers.

EVAPORATED OR BLEACHED.

Apricots, Royal, in sacks, # lb.....	6 1/2	@ 7
Apricots, Royal, fancy.....	—	@ —
Apricots, Moorpark.....	—	@ —
Apples, in 50-lb boxes, rings, pressed, fancy.....	5 1/4	@ 5 1/4
Apples, 50-lb boxes, rings, pressed, good to choice.....	4	@ 4 1/4
Figs, White, fancy pressed.....	5 1/4	@ 5 1/4
Peaches, unpeeled, good to choice.....	4	@ 5
Peaches, unpeeled, fancy.....	6 1/4	@ 7 1/4
Peaches, peeled, in boxes.....	12	@ 15
Pears, unpeeled Bartletts, halved, fancy.....	9	@ 9 1/4
Pears, halved, unpeeled Bartletts.....	6 1/4	@ 7 1/4
Pears, quartered, unpeeled Bartletts.....	6 1/4	@ 7 1/4
Plums, Black, pitted.....	6 1/4	@ 7 1/4
Plums, White and Red.....	7	@ 8
Prunes, in sacks 40-50s.....	4	@ 4 1/4
50-60s.....	3 1/4	@ 3 1/4
60-70s.....	3 1/4	@ 3 1/4
70-80s.....	2 1/4	@ 3

Prunes in boxes, 1/2c higher for 35-lb boxes, 1/2c higher for 50-lb boxes.

Prunes, Silver..... 4 @ 6

COMMON SUN-DRIED.

Apples, sliced.....	3	@ 3 1/4
Apples, quartered.....	3 1/4	@ 4 1/4
Figs, Black.....	2	@ 3
Figs, White.....	3	@ 3 1/4
Peaches, unpeeled.....	3	@ 4

RAISINS.

Market is featureless and is likely to so remain until business begins on the coming season's yield. The small stocks in the hands of jobbers are meeting with slow custom at low and irregular prices, affording no basis for quotations.

F. O. B. FRESNO DELIVERY.

London Layers, 3-crown, # box.....	1 60	@ —
do do 2-crown, # box.....	1 50	@ —
Valencia Layers, # 20-lb box.....	80	@ 1 00

(Usual advance for fractions.)

Loose Muscatel, 3-crown.....	6 1/4	@ —
Loose Muscatel, seedless.....	5	@ —

Pacifics.—2-crown loose Muscatel, 5 1/4c; 3-crown, 6c; 4-crown, 6 1/4c; seedless, 4 1/2c.

Oriental.—2-crown loose Muscatel, 4 1/2c; 3-crown, 5 1/4c; 4-crown, 6c.

(Above prices for loose raisins are for 50-lb boxes.)

Thompson Seedless.—Bleached fancy, # lb, 10c; choice, 9c; standard, 8c; prime, 6c. Unbleached, 6c.

Sultanas.—Bleached fancy, # lb, 8 1/4c; choice, 7 1/2c; standard, 6 1/2c; prime, 5c. Unbleached, 5c.

Loose Valencia.—Fancy, # lb, 5 1/4c; choice, 4 1/2c; standard, 3 1/2c.

Valencia Clusters.—Fancy, # lb, 7c; choice, 6c; standard, 5c.

CITRUS FRUITS.

Oranges are still offering in sufficient quantity to quote, but the season is practically ended, and the demand is of insignificant proportions. Only thoroughly sound fruit can be relied on to bring good figures. Lemon market was higher for best, with fair demand for choice to select, supplies of the same proving ample for current requirements. Poor qualities moved slowly at little better figures than current for weeks past. Limes were offered at unchanged rates, supplies being of fair volume.

Oranges—Navel, fancy # box.....	—	@ —
Navel, good to choice.....	1 50	@ 2 50
Navel, common to fair.....	1 25	@ 1 50
Valencias.....	2 00	@ 3 25
St. Michaels.....	2 00	@ 2 50
Mediterranean Sweet.....	1 25	@ 2 50
California Seedlings.....	1 00	@ 1 75
Lemons—California, select, # box.....	2 50	@ 3 00
California, good to choice.....	1 75	@ 2 25
California, common to fair.....	1 00	@ 1 50
Limes—Mexican, # box.....	4 00	@ 4 50
California, small box.....	50	@ 1 00

NUTS.

There are no offerings in this center worth mentioning of either Almonds or Walnuts, and as a natural sequence no business. While there are prospects for a very fair yield in this State of both Almonds and Walnuts, growers are anticipating a tolerably firm market, especially for Almonds, in consequence of a reported light foreign crop. Peanut market is lightly stocked and values decidedly steady.

California Almonds, shelled.....	14	@ 17
California Almonds, paper shell, # lb.....	10	@ 12
California Almonds, soft shell.....	8	@ 9
California Almonds, hard shell.....	4	@ 5
Walnuts, White, soft shell.....	9	@ 10
Walnuts, White, California, standard.....	7	@ 8
Chestnuts, California Italian.....	8	@ 10
Peanuts, California, fair to prime.....	5	@ 6

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Peanuts, Eastern, hand-picked.....	6	@ 6 1/4
Pine Nuts.....	5	@ 6

WINE.

There are no evidences of wine being any higher in this market than it has been since the opening of the current season, despite a sensational statement published in the daily press of war waging between Lachman & Jacobi and the California Wine Dealers' Association. They have always operated independently of each other, and little or no credence is given here to the report that there is war in the wine dealers' camp. When there are visible signs of prices moving upward, in consequence of sharp competition between the parties named, we will be glad to admit that wine growers are about to receive a benefit. Quotable rates so far remain unchanged, 14@16c per gallon wholesale for last year's dry wines, while small and select lots are held within range of 17@20c. Shipments of wine from this port by sea in May were 426,655 gallons and 655 cases, value \$123,735. For May, 1899, they were 144,922 gallons and 629 cases, value \$53,141.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, # sacks.....	81,357	6,384,555
Wheat, centals.....	22,493	6,951,618
Barley, centals.....	95,858	5,124,431
Oats, centals.....	10,500	798,444
Corn, centals.....	6,105	155,565
Rye, centals.....	585	108,687
Beans, sacks.....	1,118	365,664
Potatoes, sacks.....	19,714	1,238,998
Onions, sacks.....	3,285	172,162
Hay, tons.....	2,775	154,992
Wool, bales.....	690	60,076
Hops, bales.....	8	10,645

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, '99.	Same time last year.
Flour, # sacks.....	29,748	4,279,834
Wheat, centals.....	58,798	6,304,112
Barley, centals.....	92,632	3,968,274
Oats, centals.....	622	47,329
Corn, centals.....	1,351	23,284
Beans, sacks.....	389	27,295
Hay, bales.....	3,142	141,862
Wool, pounds.....	290,250	4,754,123
Hops, pounds.....	599	1,103,242
Honey, cases.....	—	3,583
Potatoes, packages.....	1,291	75,069

California Dried Fruit at New York.

New York, June 27.—Evaporated apples, common, 4 1/2@5c; prime wire tray, 5 1/4@5 1/2c; choice, 5 1/2@6 1/4c; fancy, 5@7 1/4c.

California dried fruits.—Market inactive and prices mainly nominal for old crop offerings.

Prunes, 3 1/2@7c.

Apricots, Royal, 12 1/4@14c; Moorpark, 15@18c.

Peaches, unpeeled, 6@9c; peeled, 16@20c.

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INDEX TO VOLUME LIX

-OF THE-

PACIFIC RURAL PRESS.

From January to June, 1900.

A

	PAGE.
Advertiser, Letter from a Pleased	49
Agricultural Education	130, 147, 166, 196
Agricultural Experts	338
Agriculture in Census	69, 230, 340
Agriculture, State Board of	146, 151
Alaska Agriculture	133
Alfalfa and Cows	292
Alfalfa, Disking	341
Alfalfa, Growing and Haymaking	19, 181
Alfalfa Hay, Value of	146
Alfalfa in Nebraska	146
Alfalfa Irrigation	181
Alfalfa Seed	113
Alfalfa Sowing	243
Alfalfa, Turkistan	37
* Alfalfa Lands and Treatment	355
Almond Pruning	263, 291
Almond Crop	410
* Almond Root Knot	337
Almonds Unprofitable	51, 163
American Farmer, Who Is the	162
Angora Breeders' Association	274
Angora Goats, Shearing	151
Anthrax	3, 9
Aphis, Parasitized	259
Aphis, Winter Spray for	69
Aplary on Wheels	135
Apple Growing, Berwick	20
Apple, New, at Lompoc	23
Apple Picking for Long Keeping	119
Apple Pruning	3, 163
Apples at Columbian Exposition	131
Apples, Cure for Scabby	85, 179
Apples in Cold Storage	231
Apples, Propagating	4
Apples, Southern California	308
Apple Varieties at Watsonville	2, 7
Apricot Grafting	83, 115
* Apricot, Mistletoe on	1
* Apricot Pruning Illustrated	2, 132, 275
Apricot Scale Parasite	374
Apricots, Fresh and Dried	1
Apricots in California	1
Apricot, Winter Irrigated	245
Aquatic Plants in California	135
Artesian Wells	231
Asparagus Growing	36

B

Bacteria in Agriculture	290, 322, 370
Banker, A Confrere	276, 323
Barley, Six-Rowed for Brewing	276, 323
Barley Yields	212
Bean Growing	227
Beans After Apricot Trees	99
Beans in Orchard	181, 375
Beekeepers' Meetings	55
Bees Profitable	181
Bee-Stung Stock, Treatment for	196
Beet Growing	183
Beets at Chino	7
Beets, Large Yield	196
Beets, Profits in	119
Beet Sugar Factory, Salinas	92, 196
Beet Sugar Product	117
Beet Tops and Pulp for Stock	19, 51, 195
Bermuda Grass	225
* Bidwell, John, Death of	403
Birds and Ripe Fruit	119, 195, 341
Birds in Orchard	166
Bloat, Treatment for	179
Borers in Apple Trees	243
Borers, Transformations of	127
Brewers' Grains for Feeding	131, 166, 359
Broom Corn	36

C

California Advantages and Opportunities	60
* California, Picturesque Mountains in	113
Calves, Raising	101, 182, 309
Canalgre	113
* Canal, San Joaquin and Kings River	183
Canker Worms	131, 179, 254, 360
Cannery Promoters	179
Caponizing	211, 243
Caprification	259
Carpet Grass	305
Casimiro, Edu	147
Castor Bean Growing	6
Cattle Range	228
Cattle, Scarcity of	37, 70, 135, 295
Celery Growing	258
Cheese in California	373
* Cheese, Rich Milk for	214
Cherimoyer	327
Cherry Disease of Fruit	4
Cherry Trees on Mazzard and Mabaleb	115
Chestnut Growing	3
Chestnut on Oak	326
Chrysanthemums	119
Citrus Fairs	309
Citrus Fruit Crops	31
Citrus Fruit Culture in Tulare	148, 187, 182
Coal Tar on Tree Bark	99
Cocoon Growing	148
Codlin Moth, Facts About	306
Co-operation	153, 366
Corn Crop, American	150
Corn Crop, Californian	129
Corn Differences in Composition	359
Corn Worm	53
Cow, Care of	180
Cow, Death by Bee Stings	7
Cows, Yield of	23, 119, 279
Creameries	246
Cucumber Growing	246
Cucumber Pickling	246
Cultivation and Irrigation, 148, 180, 292, 295, 311, 324, 359	
Curl Leaf, Cure for	85
Cut Worms, Poison for	227
Cyanide Cure for Insects	357
Cyclopedia of American Horticulture	255

D

Dairy Breeds	131, 147
Dairy, California	244
Dairy Bureau, California	194
Dairy Education in California	194, 338
Dairy in Oregon	134
Dairy in Southern California	292
Dairy Inspectors	167, 199
Dairy Management	292
Dairy, Meals for the	261
Date Palm	215
Desert Grass	83
Diabrotica in the San Joaquin	403
Dust Mule, the	180
Dynamite Thawing	15

* Illustration.

E

East and West	162
Education, Agricultural	130
Egg, Siamese Twin	119
Electric Transmission in San Joaquin	9, 257
Eucalyptus Growing in Arizona	101
Eucalyptus Rubra at Stockton	101
Ewes and Lambs, Management of Breeding	406

F

Farmers, Kinds of	397
Farming, Mixed	2, 135
Farm, Keep the Farmer on the	332
Farm Labor in California	18
Fertilizers for Fruits	116, 163
Fertilizers for Grain	150, 359
Fig and Caprification	211, 243, 388
Fig Handling at Fresno	388
Flint Growing	115
Flax Grain Sack	263
Fleas, Killing in Buildings	387
Flowers in the Home	95
* Foothill Pictures	81
Forage Plants for California	19
Forcing Vegetables	307
Forest Area of the United States	207
Forest Fires, Prevention of	173
Forest Reserves	52
Forestry Education	109
Forestry, Government Help in	86, 133
Forestry Progress	286
Forests and Farmer	52
Foxtail in Silage	275
Frost Alarm, Electric	407
Frost Fighting, Riverside	356
Frost, Preventing by Water	7
Fruit Associations	66, 135, 195, 210, 383
Fruit Buds, Formation of	66
Fruit Canning and Preserving	164
Fruit Canning Process	412
Fruit Drying, Yield of	164
Fruit Drying, Notes on	83, 158, 356
Fruit Growers' Convention	34
Fruit Growing in Italy	387
Fruit Moth, Dried	170
Fruit Profits	164, 230
Fruit Shipments, 1899	211, 259
Fruit Thinning	369
Fruit Trade in Germany	4
Fruit Trees, Stocks for	19
Fruit Trees, Unprofitable	4
Fruit Varieties, Burbank on	210, 231
Fumes and Fruit Trees	213, 357
Fumigation for Insects	85
Fungi, Sprays for	337

G

* Gall, Crown, or Root Knot	274, 321, 337
Gardening, What a Woman Can Do	326
Garden Planting	194
Geese, Feeding for Sale	115
Ginseng	214
Goats as Land Clearers	252
Golden Age	215
Grafting, Large Scale	161, 177
* Grafting Walnut Illustrated	215
Grafts, After Treatment of	211
Grain Aphis	50, 319
Grain Bags, Prison	50
Grain, Tilling of	Each Issue
Grange Matters	132
Grape, Almeria in California	83
Grapes, Persian	35
Grape, Tokay	35, 83, 102
Grape Varieties for Wine	99, 134, 163
Grasses for Dry Lands	134
Grasses in Humboldt County	99
Grasses, the Rye	38, 388
Green Manuring, Plants for	355
Gum Disease of Orange	227
Gum Disease of Prune	387

H

Hail, Fruit Injured by	111
Hail, Hitting to Prevent	273
* Halliday, A. S.	38, 54, 98, 119, 151, 183, 263, 300, 348
Hare, Belgian	367
Harness, Care of	135
Header, Improved	212, 215, 231
Hemp Growing	87
Hen, a Good Old	325
Hens and Cows Compared	229, 262
Hog, American	262
Hog, Poland-China	117, 133, 262
Hogs for Profitable Growing	214
Holstein-Friesians, Minnewawa	Each Issue
Home Circle	207
Honey, Bitter	165, 343
Honey Product of California	101, 212, 343
Honey Trade	277, 372, 389, 406
Hop Growing, California	277, 310, 332, 351
Hop Production, Limiting	223, 243
Horn Fly	226
Horses, Prices of	212
Horses, Profitable	54

I

In-Archling Girdled Trees	300
Inch, Miner's, and Equivalents	369
Insects, Beneficial	119
Insurance, Mutual	7
Irrigation and Frost	399
Irrigation, District Decision	135
Irrigation for Adore Soil	181
Irrigation for Alfalfa	293
Irrigation for Orchard	183, 311
Irrigation for Sugar Beets	402
Irrigation, Government Work for	116
Irrigation, Hints on	116, 318
Irrigation Investigation	68, 247
Irrigation, Pumping for	141
Irrigation Reservoir, Farm	116, 354
Irrigation, Sub	401
Irrigation Water, Good and Bad	17
* Irrigation Wheels for	1
Irrigation, Winter	46
Isthmus Canal	82

J

Japan Current Not a Main Factor	35
Jersey Kule for Fowls	355
June Budding	52, 242
Kafir Corn	275
Kerosene Emulsion	195
Knot, Bordeaux for Root	274, 321, 337
* Knot, Root or Crown, Tuomey	99

L

Lawns, Grasses for	403
Leaf Spot on the Madrone	340
Lemon Curing	391
Lemon Grader	129, 309, 310
Lemon Industry	823
Lemon Oil and Essence	129, 363
* Lemons at Chula Vista	23
Lemons, Santa Clara	39, 181, 3, 9
Lemon Yield	298
Live Stock Statistics	275
Loganberry	233
Lumpy Jaw	388
Lupins, University Trials of	

M

Meats for Pacific Countries	114
Melon, Too Vigorous Growth	371
Metals, Precious, California Product	269
Milk, Care of	85, 224
Milk, to Deliver Clean	85, 292
Mining Debris Question	385
* Mistletoe on Apricot	369
Moisture and Fruit Bearing	115
Moles in Lawns	197
Moss as Sock Feed	51
Moss, Removing from Trees	147
Mustard Crop	4
Myrobalan Root	65

N

* Nevada Farm Scenes	99
Nursery Stock Disinfection	55, 135
Nursery Stock Quarantine	

O

Oaks, English and Cork	3
Oleomargarine, Composition of	348
Oleomargarine Law	197, 386
Olive Culture, Conditions in California	405
Olive Growing	20, 39, 229, 324
Olive Oil Making	215
Olive not Profitable	244, 261, 291
Olive Outlook, Long	7
Olive Yield	273
* Onions, Transplanted	243
Orange Budding and Grafting	410
Orange Growing, Cost and Returns of	183
Orange Growing in California	180, 247, 309
Orange Product	87
Oranges at Lodi	7, 23, 87, 135
Orange Shipments, Early	103
Orange, Small Sizes	113
Oranges, Mandarin	309
Oranges, Puffy	54
Orange Trees at Biggs	310, 358
Orange Trees, Root Penetration of	23
Orange Trees, Yield of	54, 148
Orchard, Crops in	
Orchard Plowing	163

P

Palm Growing	36
* Pan American Exhibition	146
* Paris Green, Pure and Adulterated	146, 198
Pasture Lands, Arid	3, 100, 132
Peach Budding and Grafting	35, 67
Peach, Deep Rooting of	231, 295
Peach Doublets and Triplets	84
Peach Growing in New Jersey	403
Peach Mildew	403
Peach Moth in the Foothills	83
Peach Seedlings, Growing	3
Peach, Triumph	371
Pear Blight	17
* Pear, Rosney	194, 371
Pear Scab	3
Pears, Stocks for	115
Pecan in California	100
Pepper Growing	178
Phylloxera, Disinfecting Cuttings	131, 323
Phylloxera, Resistance of Tokay	311
Phylloxera, T. S.	276
Pie Melons as Stock Feed	55
Plowing, Steam	371
Plum, Burbank	4
Plum, Half-and-Half	357, 359
Plums, Stocks for	195
Plum, Wickson	355
Pollination and Blooming	5, 215
Pomelo	149, 391
Potato Blight	261, 293, 342
Potatoes, Treatment of Seed	324
Poultry B order	5
Poultry, California Conditions for	60, 261, 293, 342
Poultry Cholera	35, 51
Poultry Feeding	381
Poultry, Green Feed for	69, 310
Poultry Hatching	342
Poultry, Hints on	243
Poultry in Confinement	183, 261
Poultry Incubation	182, 325
Poultry Interests of Pacific Coast	5, 261
Poultry, Profit in Young	151, 197, 279
Poultry, Returns from	5, 53
Poultry, Roup in	66, 210, 309, 326, 375, 386
Prune Combine	164
Prune Crop	149, 182, 381
Prune Curing	182
Prune Grade and Yield	149
Prune, Imperial Epineuse	309
Prunes for France	213
Prunes in Washington	5
Prune, Splendor	68, 151
Prune, Sugar	
Pumping Plants for Irrigation	

Q

Quarantine Against Fruit Pests	21
--------------------------------	----

R

Radish, Large	39
Raisin Crop	164
Raisin Marketing Association	2, 151, 309
Reclaiming Salt Marsh	119, 391
Red-poll Cattle	99
Rhubarb in Young Orchard	23
Roads Good for Farming Interests	280, 387
Road Sprinkling	277
Road Sprinkling With Oil	326
Root Fungus	211, 227, 260
* Root Grafting	177
Rooting of Fruit Trees, Deep	1
Roses, Altar of	147
Roses for Southern California	118
Rubber Plants	189





